

IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF GEORGIA  
ATLANTA DIVISION

DONNA CURLING, et al.

Plaintiffs

vs.

BRAD RAFFENSPERGER, et al.

Defendants

)

)

)

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) Case No.

) 1:17-CV-2989-AT

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VIDEOTAPED VIDEOCONFERENCE DEPOSITION OF  
JUAN GILBERT, Ph.D.  
Friday, October 29, 2021  
Volume I

Reported by:

CARLA SOARES

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Pages 1 - 289

DONNA CURLING, et al. )  
 )  
 Plaintiffs )  
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 vs. ) Case No.  
 ) 1:17-CV-2989-AT  
 BRAD RAFFENSPERGER, et al. )  
 )  
 Defendants )  
 )

VIDEOTAPED VIDEOCONFERENCE DEPOSITION OF  
JUAN GILBERT, Ph.D., Volume I, taken on behalf of  
Plaintiffs, beginning at 10:06 a.m., and ending at  
5:31 p.m., on Friday, October 29, 2021, before CARLA  
SOARES, Certified Shorthand Reporter No. 5908.

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17 J. Alex Halderman

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19 Neil Martin, Veritext Concierge

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WITNESS

JUAN GILBERT, Ph.D.

EXAMINATION

Volume I

BY MR. CROSS

9

## EXHIBITS

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Document entitled "Georgia Voter  
Verification Study"

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United States Patent,  
No. US 11.036,442 B2

Exhibit 4

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Article entitled "Why computer  
scientists prefer paper ballots"

## EXHIBITS

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(None)

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1                   Witness Location:   Gainesville, Florida

2                               Friday, October 29, 2021

3                                       10:06 a.m.

4  
5                               P R O C E E D I N G S

6                   THE VIDEO OPERATOR:   Good morning.   We are  
7 going on the record at 10:06 a.m. Eastern Time on  
8 October 29th, 2021.

9                   This is Media Unit No. 1 of the  
10 video-recorded deposition of Dr. Juan Gilbert, taken  
11 by counsel for the plaintiff, in the matter of Donna  
12 Curling, et al., versus Brad Raffensperger, et al.,  
13 filed in the United States District Court for the  
14 Northern District of Georgia, Atlanta Division.  
15 This is a remote Zoom deposition.

16                   My name is David Campbell from the firm  
17 Veritext, and I'm the videographer.   The court  
18 reporter today is Carla Soares, also from Veritext.

19                   I am not authorized to administer an oath,  
20 I'm not related to any party in this action, nor am  
21 I financially interested in the outcome.

22                   All attorneys' presences will be noted on  
23 the stenographic record.   And with that, will the  
24 court reporter please swear in the witness, and we  
25 can proceed.



1 JUAN GILBERT, Ph.D.,  
2 having been administered an oath, was examined and  
3 testified as follows:

4 MR. CROSS: Before we begin the  
5 questioning, is everybody on -- does everybody here  
6 have access to the Exhibit Share or is it only the  
7 lawyers and the witness?

8 VERITEXT CONCIERGE: Everybody should have  
9 access.

10 MR. CROSS: Okay. We need -- can we go  
11 off the record? I didn't realize that.

12 THE VIDEO OPERATOR: Okay. Going off the  
13 record at 10:07.

14 (Recess, 10:07 a.m. - 10:09 a.m.)

15 THE VIDEO OPERATOR: Back on the record at  
16 10:09.

17 EXAMINATION

18 BY MR. CROSS:

19 Q Good morning, Dr. Gilbert.

20 A Good morning.

21 Q Can you hear me okay?

22 A Yes, I can.

23 Q Is there any reason why you feel you  
24 cannot testify truthfully and completely today?

25 A No.

1 Q Okay. Have you been deposed before?

2 A Yes.

3 (Exhibit 1 was marked for identification  
4 and is attached hereto.)

5 BY MR. CROSS:

6 Q Okay. Can you pull up Exhibit 1, which  
7 should be a copy of your most recent declaration? I  
8 think it's July 16, 2021. Just let me know when you  
9 have it.

10 A Okay. I'm refreshing the exhibit, waiting  
11 on it to refresh.

12 You said Exhibit 1?

13 Q Yes. It should be the only exhibit in  
14 there right now, other than -- I think there was a  
15 test or something.

16 A Okay. Let's see. I see it. Let me see  
17 if I can open that. I've got it.

18 Q If you just look at it, you can see at the  
19 end there's your signature on it.

20 Do you recognize this as a copy of your  
21 July 16, 2021, declaration in this case?

22 A Yes, it appears to be a copy of it.

23 Q Okay. And one of the things you did in  
24 this declaration was to respond to a report that  
25 Dr. Alex Halderman had submitted in this case on

1 July 1 of 2021; is that right?

2 A Yes.

3 Q Okay. You understood when you prepared  
4 this declaration that one of the things that  
5 Dr. Halderman had done for his report was to examine  
6 election equipment that had been provided by Fulton  
7 County, right?

8 A I don't recall if that was done at this  
9 time or not. I have to go back and look. But I  
10 believe I was made aware that he had gotten the  
11 equipment, but I can't remember exactly when he had  
12 gotten it and if this particular declaration  
13 responded to him having that equipment.

14 Q Do you recall writing a declaration that  
15 responded to his analysis of the Fulton County  
16 election equipment?

17 A I recall this declaration that I'm looking  
18 at. Let's see. Let me walk through this.

19 In looking at this document, I do not see  
20 a reference to Fulton County, so I don't know if  
21 this is the response to Fulton County directly.

22 Q Take a look at paragraph 9 on page 3.

23 A Paragraph 9. I'm there.

24 Q Do you see at the end the reference to  
25 Dr. Halderman, it says, "For example, Dr. Halderman

1 provides a picture of an actual ballot in his  
2 report," and you cite Halderman report on page 15?

3 Do you see that?

4 A Yes.

5 Q Does that help refresh your recollection  
6 that you were responding in part to his report where  
7 he examined election equipment provided for this  
8 case?

9 A I'm responding to the referenced report.  
10 If that is the same report, then yes.

11 Q Okay. And we'll look at Dr. Halderman's  
12 report. I'll represent to you that he provided that  
13 report on July 1, 15 days before your declaration  
14 here.

15 Does that help your recollection at all?

16 A Not really, but somewhat. I mean, it's  
17 cited there. That's what I was referencing.

18 Q Did you -- Dr. Halderman's July 1, 2021,  
19 report, did you read that carefully?

20 A Yes. I read what was given to me. Yes.

21 Q Were you given the entire report?

22 A I assume I was given the entire report.  
23 How would I know if the report was incomplete? Is  
24 there an incomplete report that says it's  
25 incomplete? I don't recall reading something that

1       said, "incomplete report."

2               Q     You said you read what was given to you.  
3     I just wanted to confirm that, to your  
4     understanding, what was given to you was  
5     Dr. Halderman's complete July 1 report; is that  
6     right?

7               A     Yes.

8               Q     Did I understand correctly, you reviewed  
9     that report carefully before responding to it,  
10    right?

11              A     Yes.

12              Q     But nowhere in your July 16 declaration do  
13     you indicate that you've conducted any examination  
14     of any election equipment used in Georgia; is that  
15     right?

16              A     Correct. I have not examined any  
17     equipment.

18              Q     You did not think that was relevant to  
19     respond to Dr. Halderman's analysis, examining that  
20     equipment?

21              A     In my response, no.

22              Q     Why not?

23              A     I only responded to things that I could  
24     respond to without having examined the equipment  
25     using the expertise that I have in the area.

1           Q    Why didn't you examine the equipment  
2 yourself so that you could respond to his precise  
3 findings where he examined the equipment?

4           A    I was not provided the equipment.

5           Q    Did you ask for it?

6           A    No.

7           Q    Why not?

8           A    I believe I mentioned this in the  
9 declaration or previous declarations. I was not  
10 aware that that was an option for me to have  
11 equipment given the nature of past cases where this  
12 equipment was never given to experts. So it's  
13 just -- it's something that never crossed my mind.

14          Q    That's an exchange that you and I had in  
15 the September hearing where I asked you in September  
16 of last year why you did not look at the equipment.  
17 But you knew as of July this year when you prepared  
18 your declaration that Dr. Halderman had access to  
19 election equipment from Fulton County; right, sir?

20          A    I believe so, looking at that declaration,  
21 yes.

22          Q    Even though you knew Dr. Halderman had  
23 access, even though you were reviewing and  
24 responding to his report regarding that access, you  
25 did not think it was relevant to ask for access to

1 the equipment yourself?

2 A No.

3 MR. MILLER: Objection to form. Asked and  
4 answered.

5 BY MR. CROSS:

6 Q You think it's appropriate for an expert  
7 who's opining on the security and reliability of an  
8 election system not to actually examine that system  
9 for himself?

10 A Yes.

11 Q You don't actually -- in your declaration  
12 from July of this year, you don't actually offer any  
13 disagreement with any of Dr. Halderman's findings  
14 based on his analysis of that equipment; correct,  
15 sir?

16 A Can you elaborate on what finding in  
17 particular, or specific findings?

18 Q Any of them.

19 A I need to know exactly which findings.

20 Q Okay. Well, direct me to your -- a  
21 portion of your July 16 declaration where you  
22 disagree with any of his findings in his July 1  
23 report.

24 A I don't understand -- you said disagree  
25 with any of his findings.

1                   It would be helpful to know what  
2           finding -- what finding you're referencing.

3           Q     Any of them.

4           MR. MILLER:   Objection.   Form.

5           THE WITNESS:   Paragraph 14.   Well, that's  
6           Dr. Appel.

7                   Halderman.   Paragraph 15.   "Dr. Halderman  
8           asserts he has tested various methods of hacking and  
9           that those methods are generally undetectable."

10                   Again, Dr. Appel likewise asserts the same  
11           thing.   "I am not aware that Dr. Halderman has  
12           provided equipment marred by 'un-detectable' hacks  
13           to any other independent researcher," so there's  
14           one.

15           BY MR. CROSS:

16           Q     And what finding by Dr. Halderman are you  
17           disagreeing with there?

18           A     Dr. Halderman asserts he has tested  
19           various methods of hacking and that those methods  
20           are generally undetectable.   That's the one.

21           Q     So you're offering an opinion that the  
22           methods of hacking that Dr. Halderman has said are  
23           generally undetectable based on his examination of  
24           the equipment --

25           MR. MILLER:   Objection.   Misstates



1 testimony.

2 MR. CROSS: I wasn't done. Let me try the  
3 question again.

4 Q You say here, "Dr. Halderman asserts he  
5 has tested various methods of hacking and that those  
6 methods are generally undetectable."

7 Do I understand that you're saying in  
8 paragraph 15 you disagree with that finding?

9 A Yes. And my disagreement is that to say  
10 that they're undetectable, I'm looking for evidence  
11 that they were -- for example, he had a machine, he  
12 hacked it, and then he handed it off to a third  
13 party, and the third party could not identify the  
14 hack.

15 Q But he did that; right, sir?

16 A Who was the third party?

17 Q You, Dr. Gilbert. He provided you his  
18 report. You had access to the same equipment  
19 through the state. You just chose not to do it;  
20 isn't that right, sir?

21 MR. MILLER: Objection to form.

22 THE WITNESS: No, I was not given the  
23 equipment.

24 BY MR. CROSS:

25 Q Let's just be really clear here.

1                   You never asked for access to the  
2                   equipment that Dr. Halderman had access to, correct?

3                   A     Correct.

4                   MR. MILLER:   Objection.   Asked and  
5                   answered.

6                   BY MR. CROSS:

7                   Q     So you decided to respond to his findings  
8                   based on hours and hours of analysis of election  
9                   equipment without ever yourself examining that  
10                  equipment; is that right, sir?

11                  A     I responded without examining that  
12                  equipment.

13                  Q     And then in paragraph 15, you criticize  
14                  him for saying he did not make his equipment  
15                  available to another independent researcher to  
16                  verify his findings when, in fact, that's exactly  
17                  what he was expecting from you; right, sir?

18                  A     I can't -- I can't confirm that.   I was  
19                  never contacted by you or Dr. Halderman offering  
20                  such a hack solution to determine if I could  
21                  identify the hack.   That was never presented to me.  
22                  So I don't think that's an accurate claim to say he  
23                  offered that to me.

24                  Can you tell me when that was offered to  
25                  me, when he offered that to me?

1           Q    Dr. Gilbert, when you received  
2   Dr. Halderman's July 1 report, you were tasked with  
3   responding to that report on behalf of the state,  
4   right?

5           A    Yes.

6           Q    And one of the criticisms you make in  
7   paragraph 15 is that he should have made the  
8   equipment available to another independent  
9   researcher to assess his findings, including whether  
10  the methods of hacking are undetectable, right?

11           MR. MILLER:  Objection.  Asked and  
12  answered.

13           THE WITNESS:  The -- to make a statement  
14  that they're generally undetectable, I would expect  
15  some evidence to support that.

16  BY MR. CROSS:

17           Q    And by "evidence," you mean having an  
18  independent researcher test his theory; that's what  
19  you write here, right?

20           A    That's -- yes, that would be my preferred  
21  method.  Yes.

22           Q    And you are an independent researcher in  
23  computer security who could have tested his theory  
24  by examining the equipment; isn't that right, sir?

25           A    I am an independent researcher

1 specializing in election security, not computer  
2 security.

3 Q What's the difference that you're drawing  
4 there?

5 A Computer security can cover networks and  
6 all kinds of computing devices. I have expertise in  
7 election security, not computer security.

8 Q Do you not have, in your view, the  
9 expertise you would need to test Dr. Halderman's  
10 theory about the hackability of this equipment and  
11 whether that's detectable?

12 A No, I didn't say I don't have that  
13 expertise. My expertise is in election systems and  
14 technology security. You used the term "computer  
15 security," and I said that does not apply to me.

16 Q Okay. So let's try this again.

17 You state in paragraph 15 that  
18 Dr. Halderman should have had another independent  
19 researcher test his theory that the hacks are, in  
20 fact, undetectable and not correctable; right, sir?

21 A Yes.

22 MR. MILLER: Asked and answered.

23 BY MR. CROSS:

24 Q Do you have the necessary expertise to  
25 test this theory in the way that you say it should

1 be done?

2 A I believe I have the expertise, and there  
3 are others who have the expertise as well.

4 Q So why did you not do that?

5 A It was never provided to me.

6 As you said, which I think is an  
7 inaccurate claim, that he offered it to me, that was  
8 never offered to me. It was never provided to me.  
9 Therefore, it did not happen. It was never offered  
10 to me.

11 Q Dr. Gilbert, I'm having a hard time  
12 following your testimony because you say on the one  
13 hand it was not offered to you, but you also admit  
14 you never asked for it. So help me understand.

15 You didn't review or examine the election  
16 equipment here. Is it because no one offered it to  
17 you or is it because you never asked for it?

18 MR. MILLER: Asked and answered.

19 THE WITNESS: Both.

20 BY MR. CROSS:

21 Q Why didn't you ask the state which engaged  
22 you to give you access to the same equipment or  
23 similar election equipment that Dr. Halderman had  
24 access to?

25 Can somebody mute, whoever is making

1 noise?

2 Go ahead, Dr. Gilbert.

3 A As I mentioned, it didn't cross my mind to  
4 do so. And the examination, I'm not sure what I was  
5 examining.

6 The only thing that would make sense to me  
7 is if I was given the equipment that he had  
8 allegedly hacked, and then -- in an attempt to  
9 identify it or correct it.

10 I wouldn't be given the equipment and then  
11 attempting to hack the equipment. I wouldn't be  
12 trying to break the equipment.

13 Q Right. But you could test his theory in  
14 the way that you say it should have been done in  
15 paragraph 15; right, sir?

16 A No.

17 Q Why not?

18 A Because, again, the protocol -- I'm sorry,  
19 maybe I wasn't clear on this -- is Dr. Halderman  
20 should do the hack, and then an independent  
21 researcher should be given that and identify. It  
22 shouldn't be someone who tries to replicate his  
23 hack.

24 In that scenario, I think that is  
25 unrealistic because the obvious thing would be to

1 say, "Oh, they didn't do it right. They didn't hack  
2 it right." Or "Of course they found it. They  
3 hacked it, and then they knew where it was."

4 Does that make -- I hope that makes sense.

5 Q Why did it not occur to you to ask for  
6 access to the election equipment when you knew, at  
7 least by September of last year, that Dr. Halderman  
8 had access to this equipment for the purpose of  
9 examination for this case?

10 A I don't -- I'm not going to hack the  
11 equipment, so I had no motivating factor to hack it.

12 As I mentioned, it didn't occur to me to  
13 ask for it. Number two, I'm not -- I don't hack  
14 equipment. I don't break things.

15 In my area of election security, I secure  
16 technology and fix things. I'm not the person who  
17 breaks them. Dr. Halderman specializes in that, so  
18 I -- I wouldn't be the one to get it and then try --  
19 you know, find vulnerabilities and exploit  
20 vulnerabilities and break things. That's not what I  
21 do.

22 Q And what do you mean, you wouldn't be the  
23 one to explore vulnerabilities with the election  
24 equipment?

25 MR. MILLER: Objection. Misstates

1 testimony.

2 THE WITNESS: As I said, I fix things.

3 That's what I do. I secure them.

4 I'll give you an example. Dr. Halderman  
5 did a study whereby he found 6.6 percent of  
6 participants did not notice or speak up that a  
7 vote -- only 6.6 percent noticed that their vote had  
8 been flipped. That's a vulnerability that he  
9 alleges in his study, and he found that. So he --  
10 he found something that was wrong.

11 And I created and designed a solution to  
12 that that secured that now. In fact, it turned out  
13 coincidentally that only 6.6 percent of my  
14 participants did not notice and could not identify  
15 the hack.

16 So we're on opposite ends of election  
17 security. He breaks things, and I'm the one who  
18 fixes them or repairs them or secures election  
19 security systems. That's the difference.

20 BY MR. CROSS:

21 Q The Michigan study that you just  
22 referenced from Dr. Halderman, you're not offering  
23 an opinion that that study is inaccurate, right?

24 A No.

25 Q What I'm still having a hard time with,



1 Dr. Gilbert, you keep saying it did not occur to you  
2 to examine the election equipment even though you  
3 knew Dr. Halderman was examining it.

4 Can you explain that to me? Why would it  
5 not occur to you to look at election equipment where  
6 you are tasked with responding to the expert who has  
7 himself examined that equipment?

8 MR. MILLER: Objection. Asked and  
9 answered.

10 THE WITNESS: Because I didn't see it as a  
11 necessity. I wasn't going to get the equipment and  
12 break the equipment or replicate his hacks.

13 BY MR. CROSS:

14 Q But couldn't -- there's no other analysis  
15 you could have done with the equipment to respond to  
16 his report?

17 A The analysis that I have done I feel is  
18 sufficient to respond to his report.

19 Q But you've done no analysis of any  
20 election equipment used in the State of Georgia; is  
21 that correct, sir?

22 MR. MILLER: Objection.

23 THE WITNESS: I have not had access to any  
24 equipment in the State of Georgia.

25 ///

1 BY MR. CROSS:

2 Q But you could have had access if you had  
3 asked for it.

4 Do you understand that?

5 A I take it that you are correct, that I  
6 could now.

7 Q You mentioned that the issue that the  
8 Michigan study found about voters largely not  
9 verifying their ballots, you have a new BMD system  
10 that you say addresses or corrects that problem; is  
11 that right?

12 A Yes.

13 Q Why did you create that new system?

14 A I created it to advance the state of  
15 ballot-marking devices. I have been working in this  
16 space since 2000, and I have done innovations in  
17 this space of election technology, so I'm advancing  
18 the state of the art. That's one.

19 Number two, I did it to hopefully remedy  
20 these concerns about voter verification. That was  
21 my other motivating factor.

22 Q And why is it important to remedy those  
23 concerns?

24 A So that, no offense, you and I don't have  
25 to have this conversation again.

1           Q    Meaning so voters like my clients will  
2   have confidence in their vote and won't bring cases  
3   like this?

4           A    Meaning we will eliminate these concerns  
5   from any perspective. But that doesn't legitimize  
6   that the concerns are at the level expressed, as  
7   always expressed.

8           Q    If an election security expert came in and  
9   offered opinions that your new system was unreliable  
10   without ever having actually examined that system,  
11   would that strike you as reasonable?

12           MR. MILLER: Objection to form.

13           THE WITNESS: Definitely. I would say  
14   definitely, because that happens constantly.

15           You referenced Dr. Appel. Dr. Appel has  
16   done that I'd say at least 50 times during the year  
17   that I was building this. That's exactly what he  
18   was doing. He was deeply engaged with me in  
19   conversations around this particular technology.  
20   That is actually a standard practice in the field, I  
21   would argue strongly.

22           BY MR. CROSS:

23           Q    Let me ask a more precise question because  
24   I'm not just talking about responding to a concept,  
25   okay?

1           If an election security expert came in and  
2       said that your new BMD system has a fundamental flaw  
3       in the software itself, in the code, would you  
4       expect them to actually take the time to examine  
5       that code?

6           A    No.  Again, that's -- this is standard.  
7       This happens constantly in our field.  And there are  
8       several people in this field who do that.  That's  
9       where they start.  That's exactly what they do  
10      constantly.

11           And if you look at elections technology,  
12      prior to this case, as I stated earlier, there were  
13      several cases where access was not granted to these  
14      particular machines, and these statements were made  
15      that, you know, there could be vulnerabilities in  
16      these machines, and never had access to them.  This  
17      is standard protocol, I would argue, definitely for  
18      years.

19           Q    I think we're missing each other,  
20      Dr. Gilbert, because you keep talking about "could,"  
21      okay?  Let's get more concrete.

22           You understand in this case Dr. Halderman  
23      is not offering an opinion that there could be or  
24      might be vulnerabilities with the election equipment  
25      in Georgia.  He's actually examined it and concluded

1       that they exist.

2                   Do you understand that?

3                   MR. MILLER: Object to form.

4                   THE WITNESS: I don't -- I'm kind of  
5 confused because when Dr. Halderman says that there  
6 is a -- for example, let's go back to the Michigan  
7 study.

8                   Voters can verify their ballots, but he  
9 claimed that they didn't verify their ballots. So  
10 that is a "definitely could" scenario.

11                   I'm not aware that Dr. Halderman provided  
12 evidence or claimed that the machines had been  
13 altered. So what Dr. Halderman was providing was  
14 that they could be altered if these particular  
15 protocols that he was suggesting were followed and  
16 there were no remedies. And he claimed that  
17 generally no one would be able to find them. But  
18 again, that has not been tested, to my knowledge.

19 BY MR. CROSS:

20                   Q We're still missing each other here,  
21 Dr. Gilbert.

22                   Do you understand that Dr. Halderman has  
23 spent hours examining the election equipment  
24 provided to him that's used in Georgia and has found  
25 that specific vulnerabilities exist in that

1 equipment today? He's not saying they might  
2 exist --

3 MR. MILLER: Objection. Asked and  
4 answered.

5 BY MR. CROSS:

6 Q -- he's saying they do exist.

7 Do you understand that?

8 A I understand that's what he said.

9 Q And you did not undertake any analysis to  
10 determine whether he's right about that; isn't that  
11 right, sir?

12 A I did not get the equipment and analyze  
13 the equipment.

14 Q Nowhere in your July 16 declaration do you  
15 offer an opinion that it would be appropriate for  
16 the State of Georgia to continue to use the election  
17 equipment if Dr. Halderman is right in his findings,  
18 correct?

19 A I don't recall saying that directly in my  
20 declaration, but I -- I could go back and look at it  
21 if you want me to right now.

22 Q Sure. Why don't you take a look and tell  
23 me if that's there.

24 A If you go to paragraph 16, paragraph 16, I  
25 would say that answers your question in that I'm

1 saying that they -- they are -- they can still be  
2 used, and they have advantages over hand-marked  
3 paper ballots.

4 So I didn't directly word it the way that  
5 you said it, but I think that Georgia can proceed  
6 with the BMDs.

7 Q So you're offering an opinion in this case  
8 that even if Dr. Halderman is right about every  
9 finding in his report, his July 1 report, you think  
10 it's appropriate as an election security expert for  
11 the State of Georgia to continue to use that system  
12 without taking any remedial measures at all; is that  
13 your opinion, sir?

14 MR. MILLER: Object to form.

15 THE WITNESS: No.

16 BY MR. CROSS:

17 Q What did I get wrong?

18 A I think they can proceed with the BMDs,  
19 but they can take precautions; the recommendations  
20 as far as voters verifying their ballots, and those  
21 actions can be instituted in different ways. They  
22 could hopefully accomplish more verification. But  
23 yes, so that's where you got it wrong.

24 Q Is it your opinion that Georgia can  
25 proceed -- it would be appropriate for Georgia to

1 continue to use the current election equipment if  
2 the state takes some sort of precautionary measures  
3 to address Dr. Halderman's findings?

4 MR. MILLER: Objection. Misstates.

5 THE WITNESS: Yes.

6 BY MR. CROSS:

7 Q And what measures should it take?

8 A The most important is on the voter  
9 verification and looking at strategies to increase  
10 voter verification.

11 And then there's probably strategies -- I  
12 have to go back and look at some of his claims, but  
13 looking at verifying the equipment and as far as  
14 making sure no additional apparatus is added to the  
15 equipment.

16 But there are things that I'd have to go  
17 back and review to do a point-by-point  
18 recommendation.

19 Q When you say "voter verification  
20 strategies," what specific strategies are you saying  
21 Georgia should implement in order to continue to use  
22 its election equipment in light of Dr. Halderman's  
23 findings?

24 A One, reminding them to verify before they  
25 scan their ballot. That's the top one. And prior



1 to, reminding them to verify.

2 Q What else?

3 A Those would be my initial recommendations.

4 There's actually a report that came out of  
5 Rice University that had some, and if I'm not  
6 mistaken, there were additional recommendations in  
7 the Michigan paper as well.

8 Q What about auditing? Is your opinion that  
9 the state should do anything with auditing to  
10 proceed with the election equipment in light of  
11 Dr. Halderman's findings?

12 A I think we -- we recommended a  
13 risk-limiting audit, RLA. That's been recommended.  
14 And I believe Georgia is instituting that.

15 Q When you say "we," who do you mean?

16 A I serve as a member of a National  
17 Academies report. We strongly recommended RLAs.

18 Q In fact, the recommendation there was an  
19 RLA on every contest, right?

20 A I don't know if it was on every contest.  
21 I'd have to go back and look.

22 Auditing is not my area of expertise. I  
23 am supporting our recommendation. But I'd have to  
24 go back and review the report to confirm whether we  
25 said on every contest or not.

1           Q    Certainly you would not expect that  
2   auditing only a single statewide contest every two  
3   years would be sufficient to address Dr. Halderman's  
4   findings with this equipment, right?

5           MR. MILLER:   Object to form.

6           THE WITNESS:   As I stated, auditing is not  
7   my area of expertise, and I would allow other  
8   members of the committee and other experts to make  
9   that decision.

10          BY MR. CROSS:

11           Q    Dr. Philip Stark is a widely recognized  
12   expert on election audits, right?

13           A    Yes.

14           Q    What remedial measure should the state  
15   take to verify QR codes in order to continue using  
16   this election equipment in light of Dr. Halderman's  
17   findings?

18           MR. MILLER:   Object to form.

19           THE WITNESS:   The verification of a QR  
20   code is to -- you can -- the QR code can be verified  
21   against the human-readable portion of the text.  So  
22   you could scan it and determine that it is a match  
23   to that text.

24           To my understanding, I have not seen a QR  
25   code that's self-modifiable whereby it changes

1       itself after it's been scanned. Therefore, you'd  
2       have evidence that there's a difference between the  
3       QR code and the actual human-readable text.

4       BY MR. CROSS:

5             Q     And what specific steps are you  
6       recommending should be taken to test that?

7             MR. MILLER: Objection. Misstates.

8             THE WITNESS: I have not given a specific  
9       recommendation as of this time. I could develop  
10      that. That hasn't been something I've worked on,  
11      but that's something I could develop if necessary.

12             I would hope the election administration  
13      would do that.

14      BY MR. CROSS:

15             Q     When you say "do that," do what?

16             A     Determine the protocol for comparing the  
17      QR code against the human-readable text.

18             Q     You understand Georgia currently has no  
19      protocol for that, right?

20             A     I was not aware if they did or did not.

21             Q     So that's not something you considered for  
22      your opinions in this case; is that fair?

23             A     I don't understand that question.

24             Q     It's okay. I'll withdraw it.

25                    Are there any other remedial measures

1 Georgia should take before proceeding with the  
2 current election equipment in light of  
3 Dr. Halderman's findings?

4 A I can't think of anything at this time.  
5 I'd have to go back and review, again, his report  
6 and do a point-by-point measure.

7 And I would also say that the RLA is --  
8 again, getting at the QR code, the RLA would also be  
9 a measure to identify differences between QR codes  
10 and the human-readable portion of the text.

11 Q One of the measures you said the state  
12 should take is reminding voters to verify their  
13 ballots before they're scanned or tabulated, right?

14 A Yes.

15 Q Do you understand Georgia already requires  
16 that?

17 A I may have read that. It wasn't at the  
18 top of my mind.

19 Q Given that Georgia already requires that,  
20 why would you expect that to have a meaningful  
21 impact on the security and reliability of this  
22 election system?

23 A Reminding voters did show some improvement  
24 on voters verifying their ballots.

25 Q In fact, the Rice study and the Michigan

1 study you cited both show that it has a very, very  
2 small improvement, if any, right?

3 A I would say it has an improvement.

4 Q Okay. Let me ask my question again.

5 The Rice study and the Michigan study that  
6 you cite both show that it has a very small impact  
7 on improving voter verification, right?

8 MR. MILLER: Objection. Asked and  
9 answered.

10 THE WITNESS: I would say it has an impact  
11 on improving voter verification.

12 BY MR. CROSS:

13 Q How much?

14 A Sufficient.

15 Q Sufficient by what measure?

16 A So I mentioned to you that Dr. Halderman  
17 had done the Michigan study and then the Rice study.  
18 And I mentioned to you that I am an election  
19 security expert that works opposite of  
20 Dr. Halderman. Halderman breaks things, and I  
21 secure things.

22 And I mentioned to you that I created a  
23 transparent voting technology that addresses or  
24 eliminates this concern of voters verifying their  
25 ballot.

1 I conducted a study here in Gainesville,  
2 Florida, similar to the protocol that Dr. Halderman  
3 used. And one of the observations that came out of  
4 this was -- another thing that I believe I've put in  
5 my declarations is that there's an assumption made  
6 that if 6.6 percent -- only 6.6 percent of the  
7 people notice that their vote was flipped, that  
8 that's sufficient to change the outcome of an  
9 election such that it goes undetected, that no one  
10 would know what happened.

11 And in my studies, I noticed that you  
12 cannot underestimate the human condition. And what  
13 I mean by that is, people are vocal. When a  
14 person's vote is inaccurately recorded, there's an  
15 assumption that people walk away and won't speak up.

16 So the ability to actually identify a  
17 problem in an election is not proportional to a  
18 percentage necessarily of those who can actually  
19 verify.

20 So it takes, from my observation and my  
21 study I just ran, a much smaller percentage to  
22 actually be vocal to identify that something is  
23 wrong.

24 Q Okay. So Dr. Gilbert, let me bring you  
25 back to my question.

1           When you say that providing reminders to  
2 voters to verify their ballot provides some  
3 sufficient improvement, what metric are you using  
4 for "sufficient" that's accepted in the field of  
5 election security?

6           A    I'm using the metric that I observe that  
7 voters are vocal, which would not be accepted in the  
8 field because this is something that's just been  
9 identified this year.

10           And in the election security community,  
11 for example, Dr. Halderman and others, again, their  
12 goal is to break things and show vulnerabilities.  
13 And from my understanding, they don't have a  
14 background like I do on the human center computing  
15 side to understand the human condition and the  
16 impact of that on an election.

17           Q    The study that you're talking you  
18 conducted, is that the study that you performed on  
19 your new BMD prototype?

20           A    Yes.

21           Q    So this was not a study that was performed  
22 using the BMD equipment that Georgia currently uses;  
23 correct, sir?

24           A    Correct.

25           Q    Even in the study that you did with your

1 new BMD prototype, you found that many voters, even  
2 when they noticed an error, often would not speak  
3 up, correct?

4 A That's not absolutely correct.

5 They confirmed that they didn't speak up  
6 because it was a study. That is a documented effect  
7 called the Hawthorne effect, which is when people  
8 are being studied, they behave differently than when  
9 they do in reality.

10 And I documented that, and we have a paper  
11 that will be published next month with all these  
12 findings. But I did present this in a lecture for  
13 Princeton University.

14 Q So you've not conducted a study on whether  
15 or the extent to which voters will even speak up to  
16 poll workers that they found an error on their  
17 ballot in an actual election; right, sir?

18 A I have not, and to my knowledge, no one  
19 has done that study.

20 Q But we do know that the Georgia Secretary  
21 of State had a study commissioned looking at voter  
22 verification in actual elections in 2020, correct?

23 A Which study is this? I'm -- can you --

24 Q Let me pull it up for you.

25 A Okay.



1 MR. CROSS: It should be in the "Marked  
2 Exhibits" folder. I'm not sure exactly how to  
3 change the exhibit name. Here we go.

4 (Exhibit 2 was marked for identification  
5 and is attached hereto.)

6 BY MR. CROSS:

7 Q Do you see Exhibit 2?

8 A Let me refresh. I don't see it.

9 MR. MILLER: David, just for your  
10 awareness, they're not labeled as Exhibit 1 -- the  
11 first one is, but there's no Exhibit 2.

12 MR. CROSS: Say again?

13 MR. MILLER: I'm just saying, for your  
14 awareness, the files are not labeled Exhibit 2, like  
15 the file name.

16 MR. CROSS: I just renamed it. It should  
17 show up now as Exhibit 2.

18 MR. MILLER: Okay.

19 THE WITNESS: Okay. I found it.

20 BY MR. CROSS:

21 Q Okay. So if you can open that, let me  
22 know when you have it, Dr. Gilbert.

23 A Got it.

24 Q Do you see that this is -- it says  
25 "Georgia Voter Verification Study, January 22nd,

1 2021"?

2 A I see that.

3 Q Do you understand that this is a study  
4 that was actually commissioned by the Georgia  
5 Secretary of State looking at actual elections in  
6 certain counties in 2020?

7 A I do not understand that as I have not  
8 read this, so I don't. All I have is the title that  
9 I can see, and all I can gather is what I can gather  
10 from the title.

11 Q In fact, you don't reference this study in  
12 your July 16 report, correct?

13 A I don't believe so. I'm looking at this  
14 trying to see if I've seen this.

15 Okay. Yeah, I don't believe I reference  
16 this study. Georgia, University of Georgia. No.

17 The study that I recall was, I believe, a  
18 study in Tennessee where people were observing  
19 whether or not individuals were verifying their  
20 ballots off of a BMD, and they were recording the  
21 amount of time spent.

22 But I don't recall this particular study.

23 Q Were you aware that the state had  
24 commissioned this study and that at least a draft of  
25 the report was available six months before you

1 issued your declaration on behalf of the state in  
2 this case?

3 A I do not. I don't -- I'm looking at this.  
4 I don't recall this study. I don't recall getting  
5 this study.

6 Q Do you recall that Dr. Stark,  
7 Dr. Halderman and Dr. Appel all discussed this study  
8 in their declarations in response to your July 16  
9 declaration?

10 A I don't recall that.

11 Q So even though all three of them  
12 emphasized this study in their response to your  
13 declaration, you never read it before this moment?

14 A I don't believe I've read this study. It  
15 does not look familiar to me. I'm trying to go  
16 through it and see. I don't -- I don't recall this  
17 study.

18 Q Have you read the reply declarations from  
19 those three experts in response to your July  
20 declaration?

21 A I may have. I don't know. If we could  
22 look at one, I could tell you if I've seen it  
23 before.

24 Q So you didn't review those, for example,  
25 in preparation for your deposition today?

1           A    I don't know if I did. I reviewed several  
2 documents, and I don't know if those were particular  
3 documents that I reviewed.

4           Q    You said a moment ago that you have an  
5 expertise on human factors that Dr. Halderman  
6 doesn't have. I just want to make sure I understand  
7 that.

8                   Is your testimony that you're an expert on  
9 human factors, not cybersecurity in the way that  
10 Dr. Halderman is?

11                   MR. MILLER: Object to form.

12                   THE WITNESS: I am an expert in human  
13 center computing and elections technology,  
14 specializing in the accessibility, usability, and  
15 security of those systems, in particular, securing  
16 them and fixing problems, not hacking them.

17                   I would say, and you have to ask  
18 Dr. Halderman, if he considers himself an  
19 expertise -- has expertise in human center computing  
20 or human computer interaction would be the question  
21 you could ask him.

22                   From my observation and knowledge of his  
23 research and what he does, I would say he does not  
24 have that. His expertise, again, is in -- in  
25 particular as it relates to elections, is in

1 breaking those systems and finding problems and, you  
2 know, he -- the way I would classify it is he's on  
3 the opposite end of the spectrum. He destroys  
4 things, and I create things and repair them and fix  
5 them.

6 BY MR. CROSS:

7 Q Would you say the same for Dr. Andrew  
8 Appel?

9 A He -- generally, I would say he doesn't do  
10 the human center computing as well. I don't think  
11 he does. But again, you could ask him to see if he  
12 thinks that's what he does. I don't think he does.

13 Q You don't think he does what?

14 A Human center -- he doesn't have expertise  
15 on human computer interaction or the human  
16 condition, those kind of things that I also have  
17 expertise in.

18 Q Are you saying that he is of the opposite  
19 end of the spectrum from you, like you characterized  
20 Dr. Halderman, in the sense that he breaks things  
21 and you fix things?

22 A I would say he's closer to that end, yes.

23 Q So you disagree with both Dr. Halderman  
24 and Dr. Appel that you should have examined the  
25 election equipment in responding to Dr. Halderman's

1 report? They're both wrong about that?

2 MR. MILLER: Object to form.

3 THE WITNESS: Do I disagree? I don't  
4 understand the question. Can you rephrase that,  
5 please?

6 BY MR. CROSS:

7 Q Sure.

8 As I understand it, you're taking the  
9 position that you did not need to examine the  
10 election equipment that Dr. Halderman did to respond  
11 to his findings about that specific equipment,  
12 right?

13 A Yes. I did not need to examine the  
14 equipment to respond to him.

15 Q And so to the extent that Dr. Halderman  
16 and Dr. Appel opined that you should have looked at  
17 the equipment, you just think they're wrong about  
18 that, right?

19 A No, I -- it depends on what thing they  
20 wanted me to look at. It depends on what is it they  
21 were hoping I would look at. That would be my  
22 question. I would need more details as to what  
23 specific thing did I need to actually look at.

24 Q You understand that Dr. Halderman's report  
25 describes each of the attacks in technical detail so

1       that another researcher can replicate and test them,  
2       right?

3               A     I believe it describes in detail, and  
4       those steps could be followed. I don't know if it  
5       would give an exact replication.

6               Q     Because you didn't try that, right?

7                     MR. MILLER: Objection. Asked and  
8       answered.

9                     THE WITNESS: No, that's not accurate.  
10       I'm basing that on my expertise, having a Ph.D. in  
11       computer science, knowing that if a person is going  
12       to say, "This is how you would hack a system,"  
13       following those steps doesn't always work out the  
14       same way.

15                    So what you're assuming is that  
16       Dr. Halderman's documentation is sufficient to  
17       create an exact replication of his demonstrated  
18       hack, and I would say I don't agree with that.

19                    Again, my recommendation -- sorry for  
20       being redundant -- is that -- and I haven't seen  
21       this -- Dr. Halderman institutes a hack, hands off  
22       the hacked equipment, because that would be the  
23       reality of the matter, to see if someone can  
24       identify and repair that hack, whereas someone  
25       getting equipment and trying to replicate a hack is

1 a different scenario.

2 And again, that's not my expertise. I do  
3 not hack things. I secure them as I gave an example  
4 of securing a solution that defused or eliminated  
5 Dr. Halderman's allegation of a voter verification.

6 So that's an example of one solution that  
7 I've done to remedy a hack that he has observed or  
8 said he found.

9 BY MR. CROSS:

10 Q You said -- you said Dr. Halderman, what  
11 he should have done was institute a hack, hand off  
12 the hacked equipment to see if someone could  
13 identify and repair that hack.

14 You could have done that with access to  
15 the equipment, right?

16 MR. MILLER: Objection. Asked and  
17 answered.

18 THE WITNESS: I think there are several  
19 researchers and election technology administration  
20 folks who -- you know, I would phrase this as a  
21 study.

22 BY MR. CROSS:

23 Q Dr. Gilbert, this is not my question.

24 A I don't understand, then.

25 Q Okay. Let me try it again.



1           You could have done yourself exactly what  
2           you just described should have happened where  
3           Dr. Halderman hacks the equipment and hands it off  
4           to an independent researcher to replicate and test  
5           the hack. Could you have done that?

6           A     That's not what I said. I purposely said  
7           I don't want to replicate any hack that  
8           Dr. Halderman has done. That's not what I'm trying  
9           to do.

10           What I'm trying to do -- what I said was  
11           if he hacked the voting machine, give it to a third  
12           party and see if the third party can identify and  
13           fix the hack, that's what I said.

14           I didn't say give a voting machine to a  
15           person and then have them try and replicate his  
16           hack, and then have them try and say, "I found the  
17           hack." That just doesn't make any sense.

18           Q     Okay. Let's be precise. This is what you  
19           said: "My recommendation is that Dr. Halderman  
20           institutes a hack, hands off the hacked equipment to  
21           see if someone can identify and repair the hack."

22           Could you have done that yourself with  
23           access to the equipment, yes or no, sir?

24           A     No.

25           Q     Why not?

1           A     Because Dr. Halderman would have to have  
2     hacked the equipment first and handed it off to me  
3     with that understanding, whereas if I had requested  
4     the equipment like he did, I would have gotten a  
5     piece of equipment that was not hacked.

6           Q     But you could have had access to the same  
7     equipment that he was working on, that he examined,  
8     if you had simply asked the state or us or the  
9     judge, right?

10           MR. MILLER:   Objection.   Asked and  
11     answered.

12           THE WITNESS:   I don't -- I guess I could  
13     have had access to that equipment, but I would not  
14     have access to the hack that Dr. Halderman had  
15     instituted.

16     BY MR. CROSS:

17           Q     Why?   You would have access to the same  
18     equipment and you'd have his report identifying the  
19     specific steps by which he did what he did.

20           A     Because to -- for me to implement a hack,  
21     again, there would be steps that I had to follow.

22                     And obviously I would suspect  
23     Dr. Halderman would say, "No, he did not do it  
24     right.   This is not how I would have done it or I'd  
25     recommend doing it."

1 Or he would have said, "Oh, that's  
2 obvious. If you institute the hack, then of course  
3 you know where the hack is from a study perspective  
4 and identifying the hack."

5 That would be his next -- and you --  
6 again, you could always ask him.

7 If I instituted his hack and then I said,  
8 "I found your hack," would he find that acceptable?

9 I would appreciate Dr. Halderman saying  
10 that is an appropriate exercise.

11 Q Where in your report do you recommend the  
12 specific steps that Georgia needs to take to fix  
13 each of the problems Dr. Halderman finds in his  
14 report with the election equipment?

15 MR. MILLER: Object to form.

16 THE WITNESS: I don't think I did that.

17 BY MR. CROSS:

18 Q You said he breaks things, you fix things.  
19 And you've not offered any opinion in your  
20 declaration about what the state needs to do to fix  
21 the problems that he's identified; right, sir?

22 MR. MILLER: Object to form.

23 THE WITNESS: I gave some recommendations,  
24 but I didn't go point by point. I did not do a  
25 point-by-point counter to say, "This is how you fix

1       this. This is how you fix that."

2                   I did not do that.

3       BY MR. CROSS:

4               Q     Why not? You said that's your expertise,  
5       right? You fix the things that he breaks. Why  
6       didn't you do that in this case?

7               A     I was trying to address the claims that he  
8       had made, and I was not making a recommendation to  
9       the state at that time.

10              Q     And you're not making any recommendation  
11       to the court as to what needs to be done to remedy  
12       the problems he finds with the system; right, sir?

13              A     It depends on each problem. I'd have to  
14       go over those problems.

15                   Some of those problems may not come to a  
16       level of a particular remedy or a recommendation.  
17       So there's -- it just depends on the specific  
18       problem.

19              Q     We'll walk through those in a little bit.

20                   You said that reminding voters to verify  
21       their ballots before they're tabulated, that that is  
22       sufficient to address concerns about the reliability  
23       of BMDs.

24                   Did I understand you right?

25              A     No, that's not what I said. I said that

1 is one strategy that can be implemented to help  
2 voters verify their ballots.

3 And I mentioned that one voter or a small  
4 percentage of voters speaking out can bring  
5 awareness to a problem.

6 Q When you testified earlier that that sort  
7 of reminder is sufficient, is a sufficient  
8 improvement, sufficient for what then?

9 A As far as identifying a problem or  
10 bringing awareness that there's a problem.

11 Q So it's not sufficient for remedying the  
12 problem; it's just sufficient for identifying that  
13 the problem exists; is that right?

14 A Well, I -- again, the scale of the problem  
15 varies. Again, his study says that only 6.6 percent  
16 noticed.

17 But in a real election contest, we -- we  
18 don't have that particular data. But at the same  
19 time, I think that the numbers will be higher, and  
20 then people are more vocal about it.

21 Q Well, Dr. Gilbert, you may be under the  
22 impression we don't have the data in a real election  
23 contest because you never bothered to read this  
24 January 2021 report that the Secretary of State in  
25 Georgia commissioned on actual voter verification in

1 elections; right, sir?

2 MR. MILLER: Objection. Misstates  
3 testimony.

4 THE WITNESS: I don't recall reading that,  
5 but I would ask that -- was that a replication of  
6 the Michigan study or the Rice study or a Florida  
7 study in a real election?

8 I don't believe so in skimming over it,  
9 meaning I don't believe they actually flipped votes  
10 and calculated how many people caught the flip.

11 BY MR. CROSS:

12 Q You say that you're an expert on human  
13 factors in elections. Given that, why would you not  
14 want to read a study that was commissioned by your  
15 client looking at human factors with respect to  
16 voter verification in actual elections in the state?

17 MR. MILLER: Objection. Relevance.

18 THE WITNESS: I did not say I did not want  
19 to read the article.

20 BY MR. CROSS:

21 Q Okay. So you want to read it, but you've  
22 chosen not to; is that what you're saying?

23 A No, I didn't say that, either. I said I  
24 have not read it. I don't recall reading it. And I  
25 plan to definitely read it. It's of interest to me.

1 But I did not read it, and so that's -- that's where  
2 I stand on it.

3 Q Well, if it's not because you don't want  
4 to read it, why have you not read it, especially  
5 given that three different experts pointed it out in  
6 their response to you?

7 A I have to go back and see where they  
8 pointed it out, and I could answer why I didn't read  
9 it after reading what they -- what their claims  
10 were.

11 Q If reminding voters to verify their  
12 ballots before they're tabulated is sufficient, as  
13 you use that term, to address the concerns about the  
14 reliability of BMDs, then why have you bothered to  
15 create this new BMD, which you said is intended to  
16 resolve that concern?

17 A Because it's an improvement. By that  
18 analogy, you know, we improve technology in a lot of  
19 areas that either work or are sufficient or whatever  
20 the case would be, but it's an improvement.

21 Q Why do you need to make an improvement if  
22 the measure you've identified is already sufficient?

23 A Because that's what I do. I make things  
24 work. I make things better. I improve upon them.  
25 That's the kind of work we do.

1           Q    You improve things that are already  
2   sufficient in the way they currently operate?

3           A    Yes. We can do that, too. Yes.

4           Q    Dr. Gilbert, you recognize that BMDs are  
5   often nontransparent, right?

6           A    I don't understand what that means.

7           Q    You don't understand what that means?

8           A    No, I do not. What do you mean by  
9   "nontransparent"?

10          Q    Do you agree that BMDs are often hackable?

11          A    No, I do not.

12          Q    Do you agree that BMDs are often overly  
13   complex?

14          A    No, I do not.

15                (Exhibit 3 was marked for identification  
16   and is attached hereto.)

17   BY MR. CROSS:

18          Q    All right, Dr. Gilbert. Grab Exhibit 3 if  
19   you would. It should pop up here in just a minute  
20   for you.

21                Let me know when you have it.

22          A    You said 3? Okay. I found it.

23          Q    Do you have it, Dr. Gilbert?

24          A    Yes, I do.

25          Q    Exhibit 3 is a patent dated June 15 of



1       this year for which you are the inventor; right,  
2       sir?

3               A     Yes, this appears to be the patent.

4               Q     Have you seen this patent before?

5               A     This appears to be what we submitted, yes.

6               Q     If you turn to the page -- it looks like  
7       it's -- if you go past the figures, so after  
8       Figure 6, you'll get to where it starts to describe  
9       the patent, and it has "Transparent Interactive  
10      Printing Interface."

11              Do you see that?

12              A     Yes.

13              Q     And this concerns the new BMD prototype  
14      that we've been discussing today that you developed,  
15      right?

16              A     Yes.

17              Q     Do you see under "Background"?

18              A     Yes.

19              Q     Do you see what's written here in this  
20      patent that you helped prepare, and for which you're  
21      identified as the inventor, it reads,  
22      "Ballot-marking devices (BMDs) such as electronic  
23      ballot markers (EBMs) electronically-assisted ballot  
24      markers, in voting machines are often  
25      nontransparent, hackable, and overly complex."

1                   That's written here; correct, sir?

2                   A    Yes, it is.

3                   Q    It also goes on, "Such conventional  
4                   devices often result in a trade-off between  
5                   consistency and transparency," right?

6                   A    Yes.

7                   Q    And at the end it reads, "It is typically  
8                   difficult or impossible to fully examine and trace  
9                   the process and result of entering selections for a  
10                  ballot using conventional BMDs and EMDs."

11                  Do you see that?

12                  A    Yes, I do.

13                  Q    In preparing the patent for which you're  
14                  identified as an inventor, were you careful to be  
15                  accurate and truthful in the information that you  
16                  included there?

17                  A    I was careful to be truthful in the  
18                  information and as accurate as possible using  
19                  language that I've seen in other places about BMDs.

20                  These are allegations against BMDs. And I  
21                  would say I don't necessarily agree with all the  
22                  allegations, but these are common allegations  
23                  against BMDs. So I'm stating what is the common  
24                  allegation against BMDs. And that's why it's in  
25                  background, to say these are the common allegations

1       against BMDs.

2               Q     Dr. Gilbert, nowhere here does it say that  
3       these are allegations that you do not believe to be  
4       true; right, sir?

5               A     Right. In a patent submission, I don't  
6       think I would say that I don't agree with these or I  
7       don't believe these things. I wouldn't say that in  
8       a patent application.

9               What I'm doing is stating what is commonly  
10      said or communicated in the -- in a community around  
11      BMD allegations.

12              These allegations that I am setting forth  
13      are -- even right as we're here now -- are the bases  
14      for these allegations. So these are, I would argue,  
15      common -- common allegations that are said.

16              Q     Dr. Gilbert, do you understand you're  
17      under oath today?

18              A     Yes, I am under oath, and I would say --

19              Q     Do you understand --

20              A     -- they're common allegations.

21              Q     Do you understand that not being truthful  
22      under oath today is a felony?

23              A     Yes, sir.

24              Q     Okay.

25              MR. MILLER: Object. This is --

1 BY MR. CROSS:

2 Q Are you representing today under oath that  
3 what's written here in a patent that you helped  
4 prepare for, which you're an inventor, under  
5 "Background," that you do not believe those  
6 statements to be accurate statements in  
7 characterizing BMDs? Is that your testimony here,  
8 sir?

9 MR. MILLER: Objection. Misstates.

10 THE WITNESS: I believe those statements  
11 to be common allegations.

12 BY MR. CROSS:

13 Q Can you answer my question?

14 A I'm answering your question as I  
15 understand it.

16 I believe those to be common allegations  
17 that are set forth by the election community against  
18 BMDs.

19 Q The reason those statements are included  
20 in the background section of the patent is they are  
21 a justification for the invention that you have  
22 offered, which is intended to address those  
23 concerns; isn't that right, sir?

24 MR. MILLER: Objection. Calls for a legal  
25 conclusion.

1 THE WITNESS: No. I see it as a  
2 background of the field. I didn't -- I don't see it  
3 as a common -- I don't understand that. No. It's a  
4 background of the field, of what's happening in the  
5 field at the current state of submission.

6 BY MR. CROSS:

7 Q So then if somebody walks into the Patent  
8 and Trademark Office and alerts them that  
9 Dr. Gilbert does not actually believe BMDs are  
10 generally nontransparent, hackable, and overly  
11 complex, you don't have any issue with that? That's  
12 fine?

13 A I don't have an issue with that.

14 Q Okay.

15 A I do not. My belief is that they are not  
16 those things, but that is the common  
17 communicated-in-the-field allegation against these  
18 particular devices.

19 Q Again, there's nothing written in this  
20 patent that says, "I, Dr. Gilbert, or the people  
21 submitting this patent, don't actually believe these  
22 statements to be true. We're just including them  
23 because somebody believes them to be true."

24 We don't see that in here, do we, sir?

25 A No, you do not. And I think that

1 statement is accurate because I don't put my belief  
2 in there. I'm stating what's commonly spoken, the  
3 common allegation that's in the field. That's what  
4 I'm document -- I'm documenting that.

5 Q Sir, given that you're now saying you  
6 believe BMDs are not generally hackable, is it your  
7 view that the BMDs that are used in Georgia are  
8 unusual in the fact that Dr. Halderman has been able  
9 to hack them in a variety of ways?

10 A So I'm -- let me address that.

11 Q Can you just answer my question yes or no?

12 A That is not a yes or no.

13 MR. MILLER: David, allow him to respond.

14 BY MR. CROSS:

15 Q Well, the problem we have, Dr. Gilbert, is  
16 you're doing exactly what Judge Totenberg told you  
17 at the hearing you cannot do.

18 When you didn't want to answer her  
19 question, she said, "You don't get to change the  
20 subject of the question."

21 So I'd like to you answer my question.

22 A Generally hackable. If a BMD is given to  
23 a person with knowledge and sufficient time, it is  
24 hackable.

25 To say it's generally hackable, I don't

1 think that's -- that is a fair statement. You have  
2 to define what "generally" would mean in the  
3 context.

4 Dr. Halderman, as you told me, had an  
5 extended period of time to interrogate and hack the  
6 particular machine. So that -- that's the  
7 perspective I'm giving.

8 Q Do you believe that the BMDs that are used  
9 in Georgia, that they are unusual in the degree to  
10 which Dr. Halderman has been able to hack them as  
11 compared to other BMDs that have been used in  
12 elections in the country, yes or no, sir?

13 A I don't know because I haven't seen  
14 Dr. Halderman hack other BMDs.

15 Q You also don't know because you yourself  
16 have never examined any BMD at all with respect to  
17 its security; right, sir?

18 A That's not accurate.

19 Q Okay. What BMD have you examined for  
20 security other than your own BMDs that you have  
21 developed and market?

22 A That's exactly right. The ones that I  
23 developed as open source and that was used and  
24 certified, that's what I have examined, and that  
25 would be an example.

1           Q    You say an example. But apart from the  
2   BMDs that you yourself have developed and market for  
3   use in elections, you have not examined the security  
4   of any other BMD that's been used in any election in  
5   the U.S., right?

6           A    I have not examined the -- have had access  
7   to a BMD to examine the security. I've had access  
8   to examine other features, but not the security.

9                    Again, I don't hack them, so I haven't  
10   been given one to say, "Fine. Can you find this  
11   hack?"

12                   That has never happened.

13          Q    What BMDs have you physically examined  
14   other than your own?

15          A    ES&S ExpressVote.

16          Q    And when was that?

17          A    I was at Clemson University at the time.  
18   I don't remember an exact year, but it had to be  
19   between 2010 and 2014, somewhere in there.

20          Q    And those are different from the BMDs that  
21   the Dominion provided to the State of Georgia,  
22   right?

23          A    Those are different BMDs.

24          Q    The BMDs that you've developed and market  
25   for use in elections, do those have the same



1 vulnerabilities that Dr. Halderman has identified  
2 with the Dominion equipment in Georgia?

3 A The -- I have not created -- I created  
4 open source software that runs on commercial  
5 off-the-shelf components, or COTS.

6 So I haven't created my own BMD and  
7 marketed a BMD, to be accurate.

8 Q You developed Prime III. That's a BMD;  
9 right, sir?

10 A Prime III is software that runs on  
11 off-the-shelf components.

12 Q As a BMD?

13 A Well, that's one aspect of it. It runs --  
14 it could run as a BMD. It can run as a  
15 remote-accessible ballot-printing option as well.

16 Q Does Prime III suffer the same  
17 vulnerabilities that Dr. Halderman identifies in his  
18 report regarding the Dominion election equipment  
19 used in Georgia?

20 A Can you identify a vulnerability?

21 Q Any. Does Prime III contain any of the  
22 same vulnerabilities Dr. Halderman has identified?

23 A It depends on the setup, but I can't think  
24 of anything. But it would depend on the setup.

25 Prime III is running on the exact same

1 equipment from a hardware perspective, but it  
2 just -- there's a lot of dependencies there. Again,  
3 it's software that runs on off-the-shelf components,  
4 so it would have to be in a particular context.

5 Q Have you provided Prime III for use with  
6 Dominion ICX BMD machines or scanners?

7 A Not to my knowledge.

8 Q As you sit here right now, do you have any  
9 reason to believe that your Prime III software has  
10 any of the same vulnerabilities that exist on that  
11 equipment and the software on that equipment?

12 A If you put Prime III on that equipment,  
13 I'm not sure of what -- if it changes the  
14 vulnerabilities. I don't know if it does. That  
15 he -- his claimed vulnerabilities, I don't know that  
16 for sure.

17 So there -- again, it could run on  
18 different platforms in different contexts. So to  
19 try and generalize and say that Prime III would be  
20 vulnerable is -- it's inaccurate to do that. We'd  
21 have to have a specific case.

22 Q What equipment does Prime III run on in  
23 the elections in which it's being used?

24 A It was being used in New Hampshire. It  
25 was running on tablets. I think Dell tablets. And

1       they had printers and a headset and a microphone.

2               It's being used in Butler County, Ohio, as  
3       a remote-accessible ballot option where it's running  
4       on a web server.

5               Q     And as you sit here, do you believe that  
6       the Prime III software that you developed that's in  
7       use in both New Hampshire and Ohio suffers any of  
8       the same vulnerabilities that Dr. Halderman has  
9       identified in his report with respect to the Georgia  
10      election equipment?

11              MR. MILLER:   Objection.   Asked and  
12      answered.

13              THE WITNESS:   I'd have to have a specific  
14      context to test that.

15      BY MR. CROSS:

16              Q     I've given you the specific context.  
17      New Hampshire and Ohio, actual places where it's  
18      used on actual equipment.

19              As you sit here, do you believe that any  
20      of the vulnerabilities Dr. Halderman has identified  
21      are present with your software used on that  
22      equipment in those elections, yes or no?

23              A     I can't think of any vulnerability that he  
24      has identified with Dominion that would apply in one  
25      of those -- in a context with Prime III.

1           Q    The testing that you did with the ES&S BMD  
2   years ago, was that cybersecurity testing?

3           A    No, it was accessibility testing.

4           Q    You've never done cybersecurity testing on  
5   BMD equipment or software; is that right?

6           A    I don't -- what do you mean by "cyber"?

7                    So I just -- as I explained, I created a  
8   transparent voting machine which we did election  
9   security testing to get at a vulnerability  
10   Dr. Halderman had identified as voters not  
11   verifying. So that's an example where I have done a  
12   test of election security, not cybersecurity.  
13   Election security.

14          Q    Thank you. That's a fair distinction.  
15   Let me ask a better question.

16                  As I understand it, you have not conducted  
17   any test to determine the extent to which any BMD  
18   software or hardware can be hacked; is that fair?

19          A    Can be hacked? I have not hacked any,  
20   so -- that's not what I do. I don't know if that  
21   answers your question or not. But I don't hack  
22   these systems. I said that time and time again.

23                  MR. MILLER: David, I don't know where you  
24   are on your timeline. Do you want to take a short  
25   break and come back, if that's all right with you?

1 MR. CROSS: Yeah, that's great. Why don't  
2 we do that, and we can make sure we are set up on  
3 Dr. Halderman's sealed report.

4 MR. MILLER: Okay. Five minutes or so?

5 MR. CROSS: Sure.

6 What do you need, Dr. Gilbert?

7 THE WITNESS: Five minutes is fine.

8 MR. CROSS: Okay. All right. Thank you.

9 THE VIDEO OPERATOR: Okay. Going off the  
10 record at 11:27.

11 (Recess, 11:27 a.m. - 11:43 a.m.)

12 THE VIDEO OPERATOR: We are back on the  
13 record at 11:43.

14 BY MR. CROSS:

15 Q Dr. Gilbert, just to pick up a little bit  
16 more on what we were talking about before, on voter  
17 verification as a means to help address concerns  
18 about the reliability of BMDs, just to be clear,  
19 that's not a cybersecurity remedy, right?

20 A That's an election security remedy.

21 Q Which is not a cybersecurity remedy?

22 A Yes. I'm not speaking to anything  
23 cybersecurity-wise. That's not what I do. I'm not  
24 a cybersecurity person. I do election security from  
25 the perspective of solidifying systems, fixing them,

1 innovating, but I'm not a cybersecurity person.

2 Q But you also emphasize that risk-limiting  
3 audits are also needed to address reliability issues  
4 with BMDs, right?

5 A I think, again, doing a NASEM report,  
6 National Academies report, we've recommended  
7 risk-limiting audits, and I'm supportive of that  
8 recommendation.

9 Q But RLAs do not have any ability to  
10 determine whether an individual vote has been  
11 counted correctly, right?

12 A Yes. My understanding -- again, I'm not  
13 an audit expert -- but my understanding is if you  
14 had hand-marked paper ballots and you send them  
15 through a scanner, and the scanner gave you a wrong  
16 tabulation, that the RLA would catch that improper  
17 tabulation. So then it would essentially get the  
18 right outcome.

19 Q Are you talking about a situation where  
20 the QR code does not match the human-readable text?

21 A Any ballot -- what I said was if you have  
22 a hand-marked paper ballot and you send them through  
23 a scanner, but the scanner has been compromised and  
24 gives you the wrong out -- number, gives you the  
25 wrong determination, the RLA should catch that and

1 give you the right tally.

2 Q Right. The right tally, but it's not  
3 going to tell you whether any individual ballot was  
4 altered, right?

5 A Would it tell you if an individual ballot  
6 was altered? If I sent a ballot through the  
7 scanner -- I guess it would depend. Again, I'm not  
8 an audit expert. It just depends on how far you  
9 investigate to determine if the ballot was correct.

10 So in other words, if a hand-marked paper  
11 ballot -- if a person made an oval but the scanner  
12 recorded that oval improperly, but if you looked at  
13 the record of the scanner and the ballot, then you  
14 would be able to get the correct record vote. So  
15 that way -- that's one way you would get a  
16 correction.

17 Q Dr. Gilbert, do you understand that in  
18 Georgia, the QR code is the official ballot of  
19 record for tabulation?

20 MR. MILLER: Object to form.

21 THE WITNESS: I believe in prior  
22 declarations, I've referenced documents that showed  
23 that the human-readable text is what was used in the  
24 audit and would be the determining part of the  
25 tally. That is my understanding.

1 BY MR. CROSS:

2 Q Do you understand when votes are tabulated  
3 in the ordinary course of an election in Georgia,  
4 they're tabulated using the QR code for a BMD  
5 ballot? Do you understand that?

6 A My understanding is that they are put  
7 through the tally machine and then they are tallied  
8 on the QR code and followed by the -- again, the  
9 RLA. But yes, it does read the QR code.

10 Q When you say, "followed by the RLA," why  
11 do you think there's an RLA of every contest in  
12 Georgia?

13 A I didn't say, "every contest." Again, I  
14 just said there's an RLA. And I -- never mind.

15 Q So when you said that the way votes are  
16 tallied in Georgia is they go through -- the QR is  
17 tabulated and then it's followed by an audit, that's  
18 not accurate except for a single election statewide  
19 every two years, right?

20 MR. MILLER: Objection. Calls for a legal  
21 conclusion.

22 THE WITNESS: I'd have to go back and  
23 confirm how it's actually done in Georgia by any  
24 statute.

25 ///



1 BY MR. CROSS:

2 Q As you sit here today, do you have any  
3 reason to believe that Georgia is auditing anything  
4 other than a single election statewide every two  
5 years?

6 A I don't -- I don't know.

7 Q So for any election where Georgia is not  
8 conducting an RLA, do you understand that the QR  
9 code is the only thing that gets tabulated?

10 A In any election that they don't do an RLA,  
11 then the QR code would be the tabulation that comes  
12 from a computer that is a scanner. I'm going to  
13 refer to it as a scanner.

14 Q And you understand for any election where  
15 there's no RLA but there's a recount, the recount  
16 relies on the QR code. They just run the ballots  
17 back through the scanners.

18 Do you understand that, sir?

19 A No, I do not.

20 My understanding, I believe -- again, I  
21 have to go back to those previous declarations where  
22 I -- my understanding is that they would actually  
23 recount the human-readable text.

24 Q Even in a recount as opposed to a  
25 risk-limiting audit?

1           A    I thought the recount did that.

2           Q    Is that the understanding you have for  
3 your opinions?

4           A    Which opinion?

5           Q    The opinions you've offered in this case.

6           A    It depends on the opinion.

7           Q    Is that the understanding you have for any  
8 of these opinions you've offered in this case?

9           A    I guess I would have to know what opinion  
10 you're asking me about.

11                   In other words, I'm not connecting this to  
12 my opinions in any kind of way. So the things  
13 you're asking me, I'm not following how -- how is  
14 this related to my opinions is what I'm asking.

15           Q    You understand that one of the ways that a  
16 ballot can be hacked with a BMD is to change both  
17 the QR code and the human-readable text; that's a  
18 concern that's been raised, right?

19           A    I understand that's a possibility. If you  
20 can get in and manipulate things, you could  
21 manipulate the QR code and/or the human-readable  
22 text.

23           Q    And the Rice study and the Michigan study  
24 show that very few, if any, voters would be expected  
25 to find that change, right?

1           A     Find what change?

2           Q     That their ballot, even as to the  
3     human-readable text, does not accurately reflect all  
4     of their selections.

5           A     Those studies suggest that a few number  
6     would identify a human-readable change on that  
7     ballot.

8           Q     In the scenario where that happened, where  
9     both the QR code and the human-readable text has  
10    been changed with respect to one or more selections  
11    voters made, an RLA would not detect that; right,  
12    sir?

13          A     If a human didn't detect the change, then  
14    the RLA would not detect it if the QR code and the  
15    human-readable text match.

16          Q     In the State of Georgia, even if an RLA  
17    were to find -- strike that.

18                In the State of Georgia, even if an RLA  
19    were to generate a different outcome for an election  
20    than what was originally reported and certified  
21    based on the tabulation of running the ballots  
22    through the scanners at the polls, there's no legal  
23    authority in Georgia that allows the Secretary of  
24    State or anyone to rerun the election, right?

25               MR. MILLER:  Objection.  Calls for a legal

1 conclusion.

2 THE WITNESS: I don't know. I'm not an  
3 election administrator, so I wouldn't be able to  
4 tell you that.

5 BY MR. CROSS:

6 Q Based on your work in this case as an  
7 expert on behalf of the state, having submitted  
8 multiple declarations, what remedy is available to  
9 voters in the State of Georgia if an RLA were to  
10 produce a different election outcome than the one  
11 that was originally reported for an election?

12 MR. MILLER: Objection. Calls for a legal  
13 conclusion.

14 THE WITNESS: I don't know. I'm not an  
15 expert on audits, and I'm not an expert on the  
16 policy that follows those.

17 I am here to talk about ballot-marking  
18 devices. That's my expertise. Not audits and the  
19 policy that follows an audit.

20 The things that you're asking as far as  
21 the RLA, my understanding -- again, I'm not an  
22 expert, you can ask the experts -- but those same  
23 things would apply to hand-marked paper ballots,  
24 meaning -- in other words, just use the word  
25 "ballots."

1           If ballots -- if the risk-limiting  
2     auditing found a problem with the ballots, then what  
3     do you do? The same scenario happens with any  
4     ballot.

5     BY MR. CROSS:

6           Q     Of the many vulnerabilities or flaws that  
7     Dr. Halderman reports in his July 1, 2021, report,  
8     how many of those apply to hand-marked paper  
9     ballots?

10          A     I don't recall, but I do recall in my  
11     declaration that I discuss hand-marked paper ballots  
12     as they relate to ballot-marking devices.

13          Q     So show me in your declaration from July  
14     of this year which findings you identify from  
15     Dr. Halderman's July 1 report could also occur with  
16     hand-marked paper ballots.

17          A     Start at paragraph 6. It goes to the  
18     tampering of the -- it's the scanner.

19                 So if you have hand-marked paper ballots  
20     you could tamper with the scanner and again give the  
21     wrong outcome. So it could give you a wrong number.  
22     Whereas if you tamper with the QR code and went  
23     through a scanner, it would give you a wrong outcome  
24     as well. Both scenarios give you a wrong outcome.  
25     If the scanner is compromised, you would get a wrong

1 outcome.

2 Q So the only findings in Dr. Halderman's  
3 report regarding the security of the Georgia  
4 election equipment that you opine in your  
5 declaration could apply to hand-marked paper ballots  
6 are those that apply to the scanner; is that right?

7 A I don't know that that's correct. That's  
8 not what I said. I gave you an example of one is  
9 what I did. I did not say that is the only one.  
10 I'd have to -- I'd have to go through this again.  
11 But I gave you -- you asked for one, and I gave you  
12 one.

13 Q All right. So you've given me that maybe  
14 some of his findings regarding scanners could apply  
15 to hand-marked paper ballots.

16 What else in your declaration identifies  
17 any findings from Dr. Halderman that would apply to  
18 hand-marked paper ballots?

19 A Let me see. I have to go through -- hold  
20 on.

21 One of the issues that is pointed out is  
22 if -- hand-marked paper ballots, do voters verify  
23 them?

24 So for example, here in 20- -- I think  
25 2020 or 2018, the governor's race, voters did not

1       verify their hand-marked paper ballots, and we had a  
2       huge undervote for the Senate race. And that was a  
3       ballot design issue, we suspect.

4               So verification as an issue relating to  
5       printed ballot-marking device summaries also was an  
6       issue for hand-marked paper ballots. That's another  
7       correlation there.

8               Q     Is it your testimony that one of the  
9       failings that Dr. Halderman details in his report  
10      with Georgia's election equipment is the lack of  
11      voter verification, that that's a cybersecurity  
12      problem he identifies with the equipment?

13              A     That is an election security problem that  
14      he identifies.

15              Q     Okay.

16              A     He's -- we talked repeatedly about the  
17      Michigan study.

18              Q     Let me -- let me try the question again.

19                    Of the specific ways in which  
20      Dr. Halderman finds that the Georgia election  
21      equipment can be hacked in his July 1 report, how  
22      many of those do you indicate in your declaration  
23      could also apply to hand-marked paper ballots beyond  
24      the ones that you say may apply to scanners?

25              A     I'm not sure -- again, I didn't do a

1 point-by-point on all of his to compare it to  
2 hand-marked paper ballots. I reference in here  
3 hand-marked paper ballots in my declaration to show  
4 an area where that is a correlation.

5 So I didn't elaborate on every single hack  
6 that he had to say that it is also a hack of a  
7 hand-marked paper ballot and in what way. I did not  
8 do that.

9 Q Are you offering an opinion that  
10 hand-marked paper ballots -- you keep referring to  
11 hacking of hand-marked paper ballots. What do you  
12 mean by "hacking hand-marked paper ballots"?

13 A If a voter decides, "I don't like any of  
14 the candidates in this contest," that means they  
15 don't fill in an oval. So now you have what's  
16 called an undervote. And an insider could just fill  
17 in an oval for whoever they want. I refer to that  
18 as an undervote hack, the ability to add a vote.

19 Now, the overvote hack, as I elaborated on  
20 in my declaration, also says that if someone filled  
21 in the oval for someone, a candidate, a person could  
22 fill in an oval for another, causing an overvote,  
23 which doesn't give a vote to a candidate but it  
24 takes away a vote from a candidate.

25 I also talk about, again, ballot design.



1       There's ballot design issues. You can do things  
2       with ballot design to cause outcomes in an election.

3               So those are things that I reference.

4               Q     But what you just referenced, those are  
5       not computer hacks, right?

6               A     No. The term "hacking" is not exclusive  
7       to computers.

8               Q     You testified earlier that Dr. Halderman  
9       is an expert on hacking and you're not, which is why  
10      you didn't examine his hacking the election  
11      equipment. So now you're saying you are an expert  
12      on hacking?

13              A     No, I'm not saying I'm an expert on  
14      hacking.

15                    To be able to identify something and say  
16      it exists doesn't require expertise. So the fact  
17      that I can tell you that you can hack paper, meaning  
18      the undervote hack or overvote hack, doesn't  
19      necessarily say I'm an expert on hacking. I'm not  
20      professing I'm an expert on hacking.

21              Q     You're not suggesting --

22              A     I'm identifying it.

23              Q     I see. Okay. Okay.

24                    The concern you've raised about ballot  
25      designs with hand-marked paper ballots, that applies

1       equally to BMDs, right?

2               A     You can have a poorly designed BMD.    I  
3     don't know that I would say it applies equally, but  
4     I would say you can have a poorly designed BMD.

5               Q     In fact, are you aware that in 2020,  
6     Georgia, the Secretary of state, reported that they  
7     had to change the software -- update the software on  
8     the BMDs because of a ballot design issue?  Were you  
9     aware of that?

10              A     No, I don't recall that.

11              Q     You weren't aware that there was an issue  
12     reported by the Secretary of State that there were  
13     so many candidates in a particular contest that they  
14     had to change the software for the BMD in terms of  
15     how that ballot gets presented?

16              A     That sounds familiar.  I'd have to go find  
17     the article.  But that does sound familiar.

18              Q     That's not -- that's not something you  
19     thought about or considered for your opinions in  
20     this case; is that right?

21              A     No.

22              Q     Can malware or hacking cause voters to  
23     write the wrong votes on a hand-marked paper ballot?

24                   MR. MILLER:  Object to form.

25                   THE WITNESS:  I don't know that there's

1       such a thing as malware on paper.

2       BY MR. CROSS:

3               Q     Is there any form of hacking you're aware  
4       of in the way you're using that term that can cause  
5       voters to write the wrong selections on a paper  
6       ballot?

7               A     Yes. We can design it so that they can  
8       write -- in the year 2000, in the State of Florida,  
9       we had a presidential election, and we were using  
10      hand-marked paper ballots, and several voters left  
11      having voted for the wrong person because of a  
12      ballot design issue.

13              So yes, you can design a paper ballot and  
14      have voters mark the wrong person.

15              Q     And you're -- sorry.

16              A     Yes, that is accurate and has been  
17      documented.

18              Q     And you're calling that hacking?

19              A     I call it -- we call it hacking or ballot  
20      design. The term -- I don't have a particular term  
21      for it.

22              What I'm saying is paper has issues, and  
23      I'm showing you the issues.

24              Q     I'm asking a very precise question,  
25      Dr. Gilbert.

1           Is there any form of hacking -- hacking --  
2           that can cause a voter to fill in a vote in a  
3           contest that they do not intend?

4           A    Yes.

5           Q    Okay.  What's that?

6           A    I gave you an example.  Florida 2000 did  
7           exactly that.  Yes.

8           Q    Okay.  So you -- it's your opinion that in  
9           Florida in 2000, whoever designed the ballot  
10          designed it in a way deliberately to cause voters to  
11          do that; they were hacking the votes that voters  
12          cast so that the voters would fill in votes they did  
13          not intend; is that your opinion?

14          MR. MILLER:  Objection.

15          THE WITNESS:  No, no.  I didn't say --  
16          BY MR. CROSS:

17          Q    How is that hacking?  How is that hacking?

18          A    As I mentioned, I used the term "hacking"  
19          or "bad design."  It's intentional or unintentional.

20                The term is -- to me, it's not important.  
21          What I'm showing you is that there are issues with  
22          paper, meaning paper can cause -- to answer your  
23          question, paper can cause a voter to select the  
24          wrong person or have the wrong entry.  Yes.  That  
25          was your question.  Yes, paper can do it, and we

1 have seen that.

2 Q That was not my question. I'm going to  
3 try it one more time. I'll remind you of what Judge  
4 Totenberg told you. You don't get to change the  
5 subject of the question, Doctor.

6 MR. MILLER: Objection. David --

7 BY MR. CROSS:

8 Q My question to you is, can you offer any  
9 way in which a hand-marked -- in which hacking --  
10 okay, I'm not talking about just your general view  
11 on the unreliability or the issues that come up with  
12 paper ballots marked by hand.

13 Can you identify any way in which hacking  
14 can cause a voter to make a selection on a ballot  
15 they did not intend, yes or no?

16 MR. MILLER: Objection. Asked and  
17 answered.

18 THE WITNESS: Yes.

19 BY MR. CROSS:

20 Q Okay. And what is the form of hacking  
21 that you're talking about?

22 A I can design a ballot in such a way that  
23 it would cause them to incorrectly record their  
24 mark, options.

25 Q And that's true for both a BMD and a

1 hand-marked paper ballot; is that right?

2 A It's possible, yes, for both.

3 Q Are you talking about designing it in that  
4 way with the intent of making voters select  
5 something other than they intended, or are you  
6 saying that would just be an inadvertent consequence  
7 of the design, or both?

8 A I'm saying it could happen either way.

9 I don't know the intention of the  
10 individual who's done it. I have not interviewed a  
11 person who's done it to determine if it was  
12 intentional or not. I can only tell you it has  
13 actually happened; therefore, we have evidence that  
14 this has occurred.

15 Q But you're not aware of any instance where  
16 it's been established that a ballot was designed  
17 with the intent of causing voters that voted by hand  
18 to vote for a candidate they did not intend to,  
19 right?

20 A I am not aware of any documented case  
21 where someone purposely did that. I am not aware of  
22 a documented case.

23 Q You're aware that -- sorry. I just got an  
24 echo for a second.

25 Doctor, are you aware that in Florida in

1       2006, there was a poor ballot design on an  
2       electronic interface for elections that caused many  
3       thousands of undervotes?

4             A     Yes, I'm aware of that.   Sarasota.

5             Q     In fact, the magnitude of the undervotes  
6       potentially could have changed the outcome of that  
7       congressional race given the magnitude.

8                    Are you aware of that possibility?

9             A     Yes, I am aware.   And that was a DRE, if  
10       I'm not mistaken.

11            Q     Are you familiar with Michael Shamos?

12            A     Yes, I know him.

13            Q     Do you communicate with him regularly?

14            A     No, I do not.

15            Q     Have you communicated with him about this  
16       case or the issues in this case?

17            A     No.

18            Q     Were you aware that the state engaged him  
19       as an expert in this case before you?

20            A     I don't -- I don't recall that.   I know  
21       Michael has been on other cases that I've been on,  
22       so I don't know.

23            Q     So you haven't reviewed any of his  
24       testimony, written or oral, for your opinions in  
25       this case; is that right?

1           A    No.

2           Q    I gather you're not aware that he  
3 testified in this case on behalf of the state that  
4 he advises not using QR codes for BMDs; you were not  
5 aware of that?

6           A    No, I was not aware of that.

7           Q    And you disagree with Dr. Shamos on that?

8           A    I think that you can do it without the QR  
9 code. I think that's a solution that would get rid  
10 of a lot of these issues that we're discussing. So  
11 I think it's feasible to do that.

12                   Since you're asking about QR code, I guess  
13 I'll be full disclosure here.

14                   I have a forthcoming -- a paper under  
15 review where we've created something called informed  
16 optical character recognition, IOCR, that has given  
17 100 percent accuracy in OCR for ballots. So that's  
18 a forthcoming solution in probably 2022. So I have  
19 worked in this area as well.

20           Q    Are you aware that the Dominion equipment  
21 that's used in Georgia currently already has the  
22 ability to scan and count the human-readable portion  
23 of the BMD ballot rather than the QR code?

24           A    I can't remember -- I get them mixed up.  
25 I can't remember if they had that, but I don't



1 know -- I haven't seen any data to see how accurate  
2 it is, how it works. I haven't seen any of that.

3 Q That's not something you considered for  
4 your opinions; is that right?

5 A I haven't seen it, so I don't know that I  
6 can opine on that as far as Dominion's -- how they  
7 do it, the accuracy. I don't have any knowledge of  
8 that.

9 Q Do you share Dr. Shamos's recommendation  
10 against using QR codes with BMDs for elections in  
11 the United States?

12 A I think BMDs can -- QR codes can be used,  
13 so I'm not totally against them. But I think -- if  
14 I had my choice, I would recommend not using them to  
15 eliminate all these discussions and concerns around  
16 them.

17 Q Looking at paragraph 15 of your July  
18 declaration again -- and if you need to pull that up  
19 again, Dr. Gilbert, feel free. It's --

20 A I got it.

21 Q Okay.

22 A Okay. I got it. Yeah.

23 Q Where you indicate here that you're not  
24 aware that Dr. Halderman has provided equipment  
25 marred by undetectable hacks to any other

1 independent researcher to test his theory that it  
2 is, in fact, undetectable and not correctable, did  
3 you recommend to your client, the Secretary of  
4 State's office in this case, that they do that?

5 MR. MILLER: Dr. Gilbert, I'm going to  
6 instruct you not to answer that question on the  
7 basis of privilege.

8 BY MR. CROSS:

9 Q Are you declining to answer?

10 A I decline.

11 Q Have you made any recommendations to  
12 anyone that this independent research that you  
13 identified in paragraph 15, that that should occur  
14 in the State of Georgia for its election system?

15 A I don't recall.

16 Q And why would you not make that  
17 recommendation as an election security expert who's  
18 concerned about the reliability of elections in  
19 Georgia and elsewhere?

20 A My understanding is getting access to the  
21 equipment for general studies like that is a  
22 complicated matter, as I mentioned before.

23 Q But you now know that it's available here  
24 just as it was to Dr. Halderman. I think we've been  
25 over this, right?

1           A     The fact that the machine is available, as  
2     I mentioned, is only available if Dr. Halderman has  
3     it first. Dr. Halderman -- it does no good -- if  
4     Dr. Halderman and I get the same equipment and I  
5     institute the hack, and then I say, "I found the  
6     hack," again, I would ask Dr. Halderman, would he  
7     accept that ruling?

8                     If he's willing to accept that, I would be  
9     very happy to get machines and institute his hack  
10    and then be able to report whether or not I found  
11    that.

12                    To me, that's not a scientific way to do  
13    this. And I don't think Dr. Halderman would agree  
14    to that.

15           Q     Let me make sure I understand.

16                    You're saying you don't think  
17    Dr. Halderman would agree that you should get access  
18    to the same equipment he had, institute the same  
19    steps that he took, to determine whether you find  
20    the same hack that he found?

21           A     Institute the same things, and then say,  
22    "Oh, I found it and corrected it"? Yeah, I don't  
23    think he -- I don't see him agreeing to that.

24           Q     And what basis do you have for believing  
25    that Dr. Halderman would not agree to that?

1           A     Because Dr. Halderman does research in  
2     these areas, and I don't think this is a proper  
3     research protocol. It doesn't make sense.

4                     In other words, if I'm going to implant a  
5     hack, of course I know where the hack is. How can I  
6     then declare that I found the hack? That doesn't --  
7     I don't know how that would work.

8                     But I would love the opportunity for  
9     Dr. Halderman to answer that question. If  
10    Dr. Halderman was -- and if I'm wrong, I'd be happy  
11    to take Dr. Halderman's advice, and I would follow  
12    his protocol, implement his hack, and then tell him  
13    if I could find his hack.

14           Q     Do you understand that Dr. Halderman has  
15    repeatedly offered to Dominion to do exactly what  
16    you're suggesting, that they look at his report,  
17    they go step by step through it, and determine  
18    whether his findings are accurate?

19                     MR. MILLER: Objection. Lack of  
20    foundation, misstatement.

21                     THE WITNESS: I'm not -- I'm not -- I  
22    don't know that. I can't -- I don't know that he's  
23    done that.

24    BY MR. CROSS:

25           Q     So take as a given that Dr. Halderman has

1 repeatedly offered to Dominion to provide them his  
2 report, to meet with them, and to even work with  
3 them to test or validate his findings and even take  
4 remedial measures.

5 Would that affect your view on whether he  
6 would agree to allow you or another independent  
7 researcher to do that?

8 A I don't -- that has no pending on my view  
9 of whether he would do that. Those are independent.  
10 I don't know that that matters on my view.

11 Q You offer the view that you thought he  
12 would not allow anyone to do that, and yet he's  
13 offered it to Dominion. Does it affect your view?

14 A No, you misinterpreted what I said. That  
15 is not what I said.

16 What I said is Dr. Halderman -- I do not  
17 believe he would agree to the following: I would  
18 get a machine. I would follow his steps to  
19 implement a hack. Then I would report if I found  
20 that hack on that machine, and if I corrected that  
21 hack on that machine.

22 I don't think he would be in line to allow  
23 such an experiment. I don't know how else to make  
24 it more clear.

25 Q That's exactly what he's offered to

1 Dominion. I will represent to you and ask you to  
2 take it as an assumption.

3 Does that change your view if you assume  
4 what I've told you to be true?

5 MR. MILLER: Objection. Asked and  
6 answered.

7 THE WITNESS: Change my view? What view  
8 are you -- I don't understand what you ask to  
9 change.

10 My view is that Dr. Halderman would not  
11 support an individual following his steps and then  
12 saying they found the attack. That is my view.

13 BY MR. CROSS:

14 Q And I'm telling you that he has offered  
15 exactly that to Dominion on numerous occasions.

16 And so in light of that, if you just take  
17 that as a given, does it change your view that he's  
18 unwilling to have anyone do that?

19 A Well, if he's done that, then obviously  
20 he's not unwilling. I never said he was unwilling  
21 to do that. I said to my knowledge, it has not been  
22 done. That exercise, to my knowledge, has not been  
23 done.

24 But I think that's an exercise that should  
25 be done in the future in general -- in general

1 terms, and I think that's an area where  
2 Dr. Halderman and I probably could work together in  
3 the future.

4 Q Do you have any understanding as to why  
5 Georgia Secretary of State's office has refused to  
6 do that themselves with an independent researcher?

7 A I do not.

8 Q Do you have any understanding as to why  
9 Dominion has refused to do that?

10 A I do not.

11 Q Do you have any understanding as to why  
12 Fulton County has refused to do that?

13 A I do not.

14 Q Are you aware of any protocols or steps  
15 that Georgia takes in the ordinary course that would  
16 detect any of the hacks that Dr. Halderman reports  
17 in his July 1 declaration or his July 1 report?

18 A I can't recall all the steps that they  
19 take off the top of my head as far as their testing  
20 and verification steps. That's not something I have  
21 in memory, so it's hard for me to answer that  
22 question to say were they aligned with things he's  
23 done.

24 Q You don't address that in your July 2021  
25 declaration, correct?

1           A    I do not.

2           Q    The analysis or testing that you suggest  
3   in paragraph 15 of your report, what steps would you  
4   describe should be taken for an independent  
5   researcher who would do that work? What should they  
6   do?

7           A    All right. So what I would recommend  
8   is -- and this is a very important question -- I  
9   think that Dr. Halderman would have particular  
10  voting equipment. He would institute his hack.  
11  That particular voting equipment would be sent to a  
12  third party, and then the third party would be --  
13  would use that equipment, and then try to identify  
14  if there's any alterations or any issues with the  
15  equipment.

16                If they identify anything, they would  
17  document it, and they would document any resolutions  
18  that they took to eliminate it.

19                That's at a very high level, but that  
20  would be the protocol, I would think.

21                And then they would report that back to  
22  Dr. Halderman, and Dr. Halderman would acknowledge  
23  if they found everything, if anything, et cetera.  
24  So that's the way that I would anticipate something  
25  like that occurring.



1           Q    Are you aware that no one at the Secretary  
2   of State's office has actually reviewed  
3   Dr. Halderman's report?

4           A    No, I'm not aware of that.

5           Q    Does that surprise you?

6           A    I don't have an opinion either way. I  
7   don't know.

8           Q    Given the many findings Dr. Halderman has  
9   about the security of the election equipment used in  
10   Georgia, wouldn't you expect those who are  
11   responsible for administering elections to at least  
12   read the report to determine whether they need to  
13   address any of those findings?

14           MR. MILLER:  Objection.  Asked and  
15   answered.

16           THE WITNESS:  I don't -- I don't have an  
17   opinion.  I think someone should read it.  I don't  
18   know who.  I don't know the protocols of chain of  
19   custody and how those things work in the State of  
20   Georgia, so I can't answer that directly because I  
21   don't -- these are things that I don't know and are  
22   outside of my expertise.

23           BY MR. CROSS:

24           Q    We talked about the Michigan and Rice  
25   voter verification studies, and one thing you

1 pointed out about those was that they did not occur  
2 in a real election, right?

3 A Right.

4 Q And then we talked about the Georgia voter  
5 verification study that the Secretary of State  
6 commissioned. One of the things you pointed out  
7 about that is they didn't flip votes like they did  
8 in the Michigan and Rice studies, right?

9 A I haven't read it, but I suspect they  
10 didn't flip the votes.

11 Q Is it your opinion that the only way to  
12 conduct a valid study of voter verification is to do  
13 it in an actual election where you're flipping  
14 votes?

15 MR. MILLER: Objection to form.

16 THE WITNESS: No.

17 BY MR. CROSS:

18 Q So you're not suggesting that that's  
19 required, right?

20 A No, I am not.

21 Q And the study that you've talked about  
22 today that you performed with your new BMD prototype  
23 has the same condition as the Michigan and Rice  
24 studies in that that was not conducted in a real  
25 election, right?

1           A     Correct.

2           Q     Are you aware that you're the only expert  
3     in this case retained by defendants that, to our  
4     knowledge, has even read Dr. Halderman's July 1  
5     report?

6           A     I was not aware.

7           Q     Does that concern you?

8           A     You just informed me. I haven't had a  
9     chance to form an opinion on it. I don't know. I'd  
10    have to think about it.

11          Q     As you sit here today as an election  
12    security expert, does that raise any concern for  
13    you?

14          A     I don't know. I'd like to hear more  
15    context around why that is. It generates questions  
16    for me, and I don't know. I don't have an opinion  
17    at this point. It's something I have to digest and  
18    then think about.

19          Q     What questions does it generate?

20          A     First of all, why is that the case? Is  
21    there -- there may be a justification for that. I  
22    don't know.

23          Q     What justification comes to mind?

24          A     I don't have one.

25               MR. MILLER: Objection. Relevance.

1 BY MR. CROSS:

2 Q I'm sorry. You said, "I don't have one"?

3 A Yeah. I don't have one. I'm not  
4 speculating. I don't know. I would want to know.  
5 I don't want to speculate.

6 Q Understood.

7 Do you still have your July declaration in  
8 front of you?

9 A I can get it. Yes.

10 Q Just let me know when you have it.

11 A I have it.

12 Q Okay. So take a look at paragraph 6.  
13 Do you see that?

14 A Paragraph 6? Let me get there. I am  
15 there.

16 Q If you look at the end of paragraph 6, the  
17 last two sentences, do you see that you wrote, "As I  
18 have also stated before, even under a hand-marked  
19 ballot system, computers must still be utilized,  
20 e.g., scanners and voter registration systems.  
21 Accordingly, this general statement is largely  
22 irrelevant"?

23 Do you see that?

24 A Yes.

25 Q And the general statement you're referring

1 to is in the preceding sentence which reads, "I  
2 agree that any computer can be hacked with enough  
3 access and knowledge of a determined malicious  
4 actor."

5 Right?

6 A Right.

7 Q Are you offering an opinion that there are  
8 no increased risks with BMDs over hand-marked paper  
9 ballots even though BMDs include at least two  
10 additional computer components, the BMD and the  
11 printer?

12 MR. MILLER: Object to form.

13 THE WITNESS: I am offering that risk  
14 exists with computing devices. Therefore, there's a  
15 risk in both.

16 BY MR. CROSS:

17 Q And one of the important things to do --  
18 sorry. Strike that.

19 One of the things to do that's important  
20 as an election security expert is to evaluate the  
21 level of risk, not just whether risk exists at all;  
22 you'd agree with that?

23 A Yes.

24 Q And you don't dispute that BMD systems  
25 pose greater risk than hand-marked paper ballots in

1 terms of manipulation through the computer equipment  
2 because there's extra equipment, right?

3 A I -- I take issue with that from the  
4 perspective of just counting and saying that there's  
5 more computer equipment, therefore, there's more  
6 risk. I don't agree with that. I don't agree with  
7 that analogy.

8 Q One of the things that you point out is  
9 that with hand-marked paper ballots, an insider can  
10 alter votes where there are undervotes or overvotes,  
11 for example, right?

12 A Yes.

13 Q And an insider can also alter votes in a  
14 BMD system; we're agreed on that, right?

15 A Can you give me the scenario by which  
16 you're referencing that?

17 Q Sure. Any of the ways that Dr. Halderman  
18 identifies in his July 1 report.

19 A In the ways that he designated, an insider  
20 with a certain level of technical expertise could  
21 certainly do that versus with a hand-marked paper  
22 ballot, 100 percent of the people inside can do  
23 that.

24 Q Taking the undervote, for example, where  
25 a -- a situation where, on a hand-marked paper

1 ballot, a voter does not fill in any selection for a  
2 particular contest, that's what we're talking about,  
3 right?

4 A Yes.

5 Q And so you're saying in that situation, an  
6 insider could come in with a pen and fill in a vote  
7 for that -- that voter that that voter did not  
8 intend, right?

9 A Correct.

10 Q And you've posited in the past that that  
11 takes, say, at least two to five seconds to do that,  
12 right?

13 A Correct.

14 Q And the insider has to do that one ballot  
15 at a time, right?

16 A Correct.

17 Q And the insider has to have access to each  
18 ballot, the paper ballot, that they are  
19 manipulating, right?

20 A Right. That's the point. Yes.

21 Q And they have to have access to each of  
22 those ballots in an environment where they're not  
23 going to be detected, right?

24 A Correct.

25 Q And so for an insider to -- strike that.

1           For an election where the contest is  
2       decided by, let's say, a 20,000-vote differential,  
3       over 10,000 votes would have to be altered, flipped,  
4       to reverse the outcome of that election, right?

5           A     The margin of victory is 20,000 votes. So  
6       if you alter 10,000 of one, yes, that would break  
7       even.

8           Q     Well, 10,000 would break even. 10,001  
9       would flip the result, right?

10          A     Correct.

11          Q     And in the world where we've got  
12       hand-marked paper ballots and an insider that's  
13       changing maybe undervotes or overvotes in that  
14       election, they're going to need at least two to five  
15       seconds with over 10,000 ballots in an environment  
16       where they have access to each ballot and they can  
17       do it undetected, right?

18          A     That sounds right.

19          Q     With the hacks that Dr. Halderman  
20       identifies in his report, an insider could  
21       mass-change 10,000 -- hundreds of thousands of votes  
22       in a matter of minutes with access to the election  
23       equipment, right?

24          A     It depends on which hack you're  
25       identifying.



1           Q    There are hacks that he identifies in his  
2   report that allow that, right?

3           A    It depends on which hack. Can you tell me  
4   which hack you're referencing?

5           Q    We're going to get to that. But right now  
6   I'm trying not to get into the sealed stuff. I  
7   just -- I just -- do you agree that there are hacks  
8   identified in Dr. Halderman's report, at least one  
9   or more hacks, that would allow an insider to change  
10   votes on a mass scale, thousands, tens of thousands  
11   or hundreds of thousands of votes, in a matter of  
12   minutes with malware?

13           MR. MILLER: Objection. Asked and  
14   answered.

15           THE WITNESS: Again, I need to know the  
16   specific hack. I -- I don't want to claim that that  
17   is the case without knowing the hack.

18   BY MR. CROSS:

19           Q    As you sit here, you don't remember  
20   whether there are any such hacks in his report?

21           A    I need the context. I don't -- I need the  
22   context.

23           Q    What about a hack where the malware  
24   changes the QR code and flips it from the intended  
25   selection by the voter? Are you with me?

1           A     Okay.

2           Q     You understand that that is a hack that is  
3 included in his report, right?

4           A     Okay.

5           Q     And you understand that an insider that is  
6 able to put that malware into the system could do  
7 that in a matter of minutes and change votes on a  
8 mass scale, right?

9           MR. MILLER: Object to form.

10          THE WITNESS: I don't know on a mass  
11 scale. An insider could do that and -- again, it  
12 depends on the hack.

13          So my colleagues, Dr. Halderman,  
14 Dr. Appel, several of them have said to me  
15 repeatedly, when we do have the opportunity to talk,  
16 that if they were going to hack an election, they  
17 wouldn't change every vote. They'd selectively  
18 change.

19          So when you say change a certain quantity,  
20 that's why I need more context. Because even they  
21 won't admit that they're changing every vote from a  
22 candidate to another candidate.

23          So to say that it's a large scale, to say  
24 that it would change a certain number, I need more  
25 specifics, and then I can answer your question

1 accurately.

2 Because the context that I've been given  
3 by them repeatedly is that, "No, no, no, no, no.  
4 The reason no one is going to detect is because we  
5 don't change all of them all the time. We don't  
6 change that frequently."

7 So I hear that from them repeatedly. And  
8 then your line of questioning suggests something  
9 otherwise, so I need you to be specific so we have  
10 this accurately recorded.

11 BY MR. CROSS:

12 Q All right. Let's do it this way: You've  
13 got an insider who's changing votes on a hand-marked  
14 paper ballot that takes them two to five seconds at  
15 least, right?

16 A Okay.

17 Q Okay. So let's say an average of 3.5  
18 seconds. We'll split it right down the middle. Are  
19 you with me?

20 A Okay.

21 Q So we've got 10,000 votes that are getting  
22 changed every 3.5 seconds, right? That gets us to  
23 about 2,800 seconds. We divide that by 60, we get  
24 to 47 -- make sure I get this right. Hold on.  
25 Sorry. I did that wrong. I'll do this again.

1 Right. So 10,000 ballots at three and a  
2 half seconds would be 35,000 seconds on average to  
3 change 10,000 ballots, right?

4 A Okay.

5 Q Okay.

6 MR. MILLER: Object to form.

7 BY MR. CROSS:

8 Q And we divide that by 60, we get to over  
9 583 minutes. Divide by 60 again, we get to almost  
10 ten hours that it would take an insider to change  
11 ballots in the way that you've suggested for  
12 hand-marked paper ballots, which they would have to  
13 do in an environment where they have access to the  
14 ballots for ten hours and can do it undetected,  
15 right?

16 A Right. According to your analysis, that  
17 scenario plays out.

18 Q Do you understand that Dr. Halderman has  
19 identified hacks -- for example, one that's commonly  
20 discussed with these types of BMDs is changing --  
21 flipping the QR code in a way that that could happen  
22 in minutes, right, where an insider can embed the  
23 malware in the BMD within minutes and flip 10,000  
24 votes? You understand that, right?

25 A No. So let me make sure I understand what

1       you're asking.

2               Someone inserts malware that's going to  
3       change the QR code, so it's going to change 10,000  
4       votes and only 10,000 votes.

5               So what happens if that particular  
6       precinct only has 5,000 votes? So it changed all  
7       5,000 votes. And is it changing the QR code and the  
8       human-readable text or just the QR code?

9               There's so many -- I need more context. I  
10       don't know how else to put it.

11              Q     Okay. All right. We'll come back to it  
12       when we walk through Dr. Halderman's report.

13              Do you have your declaration in front of  
14       you again?

15              A     Yes.

16              Q     Okay. In paragraph 8, you write, "Neither  
17       of the Curling experts offer any scientific research  
18       regarding voters' proclivity to review hand-marked  
19       paper ballots to ensure their ballots are marked and  
20       will count as intended."

21              Do you see that?

22              A     Yes.

23              Q     And you don't identify any such research  
24       yourself, right?

25              A     Right.

1           Q   And we agree that any error on a  
2   hand-marked paper ballot at the time the voter  
3   completes the ballot is caused by the voter, right?

4           A   No.

5           Q   Okay. How is that not accurate?

6           A   In Florida in the year 2000, there was a  
7   ballot design that caused errors that were not the  
8   fault of the voter. That's an example.

9           Q   The ballot design caused the voter to fill  
10   in a selection they did not intend; is that what  
11   you're saying?

12          A   Exactly.

13          Q   But the selection that appeared on the  
14   ballot was manually entered by the voter with a pen  
15   or pencil, right?

16          A   Correct.

17          Q   Paragraph 9, do you have that in front of  
18   you?

19          A   Yes, I do.

20          Q   Do you see five lines down, you write,  
21   "Time spent reviewing a ballot, however, has little  
22   to do with whether it was actually verified"?

23                   Do you see that?

24          A   Yes.

25          Q   Is that something you really believe? You

1 stand by that claim?

2 A I -- I do stand by the claim that time  
3 spent reviewing doesn't guarantee accuracy of that  
4 review.

5 Q That's not -- sorry.

6 A So again, I mention in studies that I've  
7 seen, there's been this assumption because there was  
8 thought that people didn't spend a lot of time,  
9 whatever that is, that they could not have  
10 accurately reviewed their ballot. And I don't agree  
11 with that.

12 Q But what you just said is not what you  
13 wrote here, right? You didn't write anything about  
14 guaranteeing. What you wrote is "Time spent  
15 reviewing a ballot, however, has little to do with  
16 whether it was actually verified."

17 Do you stand by that statement?

18 A Yeah, I do, because you can review a  
19 ballot and not review the entire ballot. You can  
20 spend a lot of time looking at a particular contest.  
21 You can -- there's so many different ways that time  
22 spent can not be an accurate measure of reviewing  
23 the ballot.

24 Q So it's your opinion that whether a voter  
25 spends one second versus, say, 30 seconds reviewing

1 a ballot tells us nothing at all about the  
2 likelihood of whether that voter has accurately  
3 verified the selections; is that your opinion, sir?

4 A No, I don't say "nothing at all." I won't  
5 say "nothing at all."

6 Q In fact, it can tell us a lot, right? We  
7 can reasonably conclude that someone who spent only  
8 a second or less reviewing a two-page ballot that  
9 has lots of contests has very likely not verified  
10 the accuracy of all those contests, right?

11 A I won't agree with that. I would want  
12 data to support that.

13 I think there's scenarios where -- that a  
14 small amount of time could result in an accurate  
15 verification. In particular, if the voter voted  
16 party -- straight party. That's -- and again, it  
17 depends on the design of the ballot summary.  
18 There's things that can make less time spent and  
19 easier verification.

20 Q So you think that a two-page ballot that  
21 has numerous contests on both pages, on the front  
22 and back, even for a voter who voted the same party  
23 on every selection, that they could reliably review  
24 that for every contest in under a minute -- I'm  
25 sorry -- in under one second? That's what you're



1 saying?

2 A Under a second? I have to see it. That's  
3 a challenge, but again, I would honestly -- I think  
4 that is a challenge. I think that is a challenge.  
5 For less than a second, I think that could be a  
6 challenge.

7 Q Did you -- sorry. I may have asked you  
8 this before.

9 Did you review Dr. Philip Stark's response  
10 to your declaration in this case?

11 A I don't recall. I may have. I don't  
12 know. It just depends. Can you tell me what the  
13 particular question or context is? And then I could  
14 tell you if I recall that.

15 Q Do you recall that he cited studies of  
16 reading that report rates of about 138 words per  
17 minute to 600 words per minute for college students  
18 depending on the goal? Do you recall that?

19 A Yes, I do.

20 Q And the studies also indicated for general  
21 tasks, a typical rate is 300 words per minute.

22 Do you see that?

23 A Yes.

24 Q He then walked through exactly what you've  
25 just described about looking at data on the degree

1 and speed at which individuals can read, and  
2 indicated that for a typical ballot in Georgia in  
3 the recent elections, it's going to take a lot more  
4 than one second to verify each contest.

5 Do you recall that?

6 MR. MILLER: Objection. Lack of  
7 foundation.

8 THE WITNESS: I don't understand the  
9 question. Do I recall -- I recall the minutes, but  
10 I don't understand your question.

11 BY MR. CROSS:

12 Q Do you recall that he pointed out that  
13 exemplar ballots contained between 16 contests in  
14 Clark County as one example he cites and 27 contests  
15 in Oconee County? Do you remember that?

16 A I don't remember that, but that doesn't  
17 sound unusual.

18 Q He points out that five seconds to review  
19 27 contests would be only 0.185 seconds per contest.

20 Do you see that?

21 A I don't see it, but I understand the math  
22 behind it.

23 Q Okay. As you sit here today, you don't  
24 dispute any of the analysis that he provides in his  
25 declaration responding to you on the amount of time

1       that it would take, based on the studies that were  
2       conducted on reading rates, to verify ballots in  
3       Georgia election, right?

4             A    No, I absolutely dispute it, and on the  
5       basis that Dr. Stark is a brilliant statistician,  
6       and I'm not surprised by these numbers. But again,  
7       they forget the human condition.

8             So notice that in all the things you just  
9       read, you said, "reading." "Read." "Reading."  
10      "Read." "Reading." You used that word several  
11      times, and so did he. You assume that you have to  
12      read the ballot to confirm and verify the  
13      selections.

14            So there's a notion we call sight words,  
15      meaning kids learn to read using sight words,  
16      identifying words upon sight. You don't actually  
17      have to read the line to identify that anomaly on  
18      the line. You can identify anomalies by looking at  
19      them, not necessarily reading them.

20            Now, I don't recall him having data on  
21      identification of anomalies upon sight, which is the  
22      more accurate way to look at this, versus how --  
23      what it takes to read text and things like that.

24            So that's why I would object to his -- I  
25      think the numbers are correct in the context of

1 reading, but I don't think this exercise is a  
2 reading exercise.

3 Q In the Georgia Secretary of State  
4 commissioned study on actual elections for voter  
5 verification, are you aware that it found that more  
6 than half of voters observed either spent no time at  
7 all reviewing their ballot or did so for less than  
8 one second? Were you aware of that?

9 A I don't recall that.

10 Q So in a contest like Oconee, in an  
11 election like in Oconee County where there are 27  
12 contests, are you offering an opinion that voters  
13 could verifiably -- sorry. Strike that.

14 In an election like in Oconee County where  
15 there were 27 contests, are you offering an opinion  
16 that voters can typically, reliably verify their  
17 selection on each of those 27 contests by reviewing  
18 their ballot in under one second?

19 Is that an opinion you're offering in this  
20 case, sir?

21 MR. MILLER: Objection. Form.

22 THE WITNESS: No, that is not my opinion.

23 BY MR. CROSS:

24 Q Take a look at paragraph 12 of your  
25 declaration, please.

1           A    Okay.  Got it.

2           Q    Here, you posit a hypothetical based on, I  
3   think it's the Michigan study, where you take the  
4   6.6 percent from in paragraph 12 at the end.

5                   Do you see that?

6           A    Yes.

7           Q    And you say, "But that means the other  
8   6.6 percent that did notice," which, in your  
9   hypothetical, would be 832 votes based on the  
10   Trump/Biden election in 2020, you say that for those  
11   voters, they "simply did not say anything or  
12   otherwise simply corrected their ballot and thought  
13   nothing of it then or since."

14                   Do you see that?

15          A    Yes.

16          Q    You say, "I find this unlikely in light of  
17   my experience, qualifications, and recent work in  
18   the field in relation to my transparent BMD  
19   prototype."

20                   Do you see that?

21          A    Yes.

22          Q    At the end of that paragraph, you write,  
23   "Even still, it would mean there are 832 spoiled BMD  
24   ballots from that 2020 Biden/Trump election," right?

25          A    Yes.

1           Q    But you don't indicate anywhere in your  
2   declaration how many spoiled ballots there were in  
3   that election, right?

4           A    Right. I don't have that data.

5           Q    Did you ask the state for it?

6           A    I don't recall. I don't think so. I  
7   don't recall.

8           Q    You didn't think it was relevant for your  
9   analysis in saying that 832 spoiled ballots might  
10   indicate something, and you didn't want to know  
11   whether that number of spoiled ballots actually  
12   exist in the election?

13          A    I've searched for it. I couldn't find the  
14   data. I didn't ask the state, but I searched for  
15   it, and I couldn't find that data.

16          Q    Why didn't you ask the state or Fulton  
17   County?

18          A    I don't know. It didn't occur to me to  
19   ask them.

20          Q    Would it surprise you to learn that in the  
21   Biden/Trump presidential election, there were a lot  
22   more than 832 spoiled ballots?

23          A    No, it wouldn't surprise me if there were  
24   more than that number of spoiled ballots, but  
25   specifically whether those spoiled ballots

1 specifically had a vote for Biden. How many spoiled  
2 ballots had Biden on them? That's the bigger  
3 question.

4 Q And that's not a question you posed to  
5 your clients, right?

6 A I have not.

7 Q And have you recommended to anyone that  
8 they should look into that to determine whether  
9 there are 832 spoiled ballots or more with Biden on  
10 them?

11 A No, I have not.

12 Q You don't think that's something somebody  
13 should take a look at?

14 MR. MILLER: Objection.

15 THE WITNESS: I think someone could take a  
16 look at it, but you -- I understand your position on  
17 this, but you completely ignored the previous  
18 comment, which is, if that many people had their  
19 votes switched, and again, from my experience, in  
20 particular, a vote where they were voting for Trump  
21 and it switched to Biden, there would have been  
22 chaos.

23 And so I don't recall chaos on election  
24 day around votes being switched from Trump to Biden.  
25 I don't see that scenario playing out, where people,

1 from my experience, would have just taken that and  
2 not gone crazy with it.

3 So that's why I didn't raise it as an  
4 issue, but I don't think there's any scenario where  
5 this could have played out.

6 BY MR. CROSS:

7 Q Do you know how many Georgia voters voted  
8 for -- voted in the presidential contest in 2020?

9 A I don't know off the top of my head. I  
10 had that data at one time.

11 Q Do you know what percentage 832 voters  
12 would be of that total?

13 A I know it's very small. I don't remember.

14 Q A lot less than 1 percent, right?

15 A Okay.

16 Q I mean, you don't dispute that, right?

17 A I don't -- I don't have the numbers. If  
18 you'd like, I can Google and ask how many people  
19 voted in Georgia, and that would give me the number,  
20 and then I could get a percentage directly off of  
21 that number.

22 Q Are you aware that Georgia has deployed  
23 over 30,000 BMDs across the state for that election?

24 A I was not aware of the exact number. I  
25 know it was in the thousands, but I didn't know the



1 exact number.

2 Q And do you recall that Dr. Appel explains  
3 in his response to your declaration that with over  
4 30,000 BMDs and 832 spoiled ballots, that would  
5 amount to only a single spoiled ballot for at least  
6 every 36 BMDs across the entire state on average?  
7 Do you recall that?

8 A Vaguely. I don't recall off the top of my  
9 head.

10 Q And he went on to explain that in that  
11 scenario, most BMDs would have no spoiled ballots  
12 from any voter claiming an error on the ballot, and  
13 a handful of BMDs would have only one such spoiled  
14 ballot.

15 Do you remember that?

16 A Vaguely, but -- okay.

17 Q So it's your testimony in this case that  
18 if voters reported a single spoiled ballot with  
19 respect to only every 36 BMDs across the entire  
20 state, that that would lead to chaos in the  
21 election; that's what you're saying?

22 MR. MILLER: Objection.

23 THE WITNESS: That's not what I'm saying.

24 What I'm saying is if -- actually, that  
25 scenario is actually more true than you probably

1       imagine. A single voter whose vote is flipped can  
2       lead to chaos.

3               And so, again, ignoring the human  
4       condition, I understand that statistically it seems  
5       that it morphs in reality from a statistical  
6       perspective. But again, you're ignoring the human  
7       condition.

8               To flip those number of votes, and  
9       people just ignore it, I don't think that's a  
10      reality. That is not reality. Based on -- when I  
11      did my study with the transparent voting machine, I  
12      did a combination of a Florida 2018 and a Florida  
13      2020 ballot that had the presidential election on  
14      it, and flipping votes disproportionately higher at  
15      the top of the ballot with the presidential  
16      election. And flipping those votes caused reactions  
17      that would not have gone unnoticed, and that's even  
18      in the study.

19              So for my observation as an expert in this  
20      field dealing with human subjects and human studies  
21      in the real world, this would have been catastrophic  
22      if that was observed.

23              So the number -- what percentages  
24      statistically, although we can minimize them, you  
25      cannot minimize the human condition and the reaction

1 to these things, which I think a lot of my  
2 colleagues, in particular those on the cybersecurity  
3 side, would do that. And on the, you know, security  
4 side, that's how they see the world. I understand  
5 that. But that's not reality.

6 BY MR. CROSS:

7 Q Again, in the study you keep talking about  
8 on your pilot BMD, many of the people who  
9 participated in that study did not report an error  
10 even when they saw the error on the flipped ballot,  
11 right?

12 A Yes. Those people reported that they  
13 didn't speak up because it was a study, and then  
14 they were able to successfully tell me immediately  
15 which one was flipped. So they accurately saw it.

16 Q Well, let's be clear.

17 Even among those who reported an error,  
18 many of them did not identify the error correctly,  
19 right, in your study?

20 A No. No, no. I had 151 participants.  
21 Only one participant said there was an error and  
22 could not identify it. A 67-year-old white female  
23 who was just playing with the system was the only  
24 one who said, "Yeah, there was an error," and could  
25 not identify it. Only one.

1 Q Maybe we'll look at that later.

2 Just so I understand, you're saying that  
3 in your -- in the study, there was only one  
4 participant who identified an error on their ballot,  
5 or had it pointed out to them that there was an  
6 error, and they identified the error incorrectly?

7 A They could not identify the error.

8 Q Okay.

9 A They could not identify it.

10 Q Okay. So let's make sure we're talking  
11 about the same thing.

12 I thought in your study, one of the things  
13 you found was that even for participants that  
14 reported an error on the ballot, at least some of  
15 them, more than one, did not identify the error  
16 correctly. Am I wrong about that?

17 A Yeah, you're wrong.

18 Q Okay.

19 A There was only one participant who said,  
20 "Yeah, there was an error."

21 And I said, "Well, can you tell me where  
22 the contest flipped?"

23 She could not do it. There was only one.

24 Q Okay. And you talked about the human  
25 condition a lot.

1           In the real world of an election and using  
2           your hypothetical of 832 spoiled ballots, what basis  
3           do you have to believe that a single voter, over the  
4           course of an entire election day, voting on a BMD,  
5           who reports one ballot where they thought that the  
6           result was flipped for a single contest, that a poll  
7           worker would raise that concern to election  
8           officials and to the point that someone would think,  
9           "Hey, we need to investigate whether the system has  
10          been hacked"?

11           What's your basis for believing that that  
12          is a plausible scenario?

13           MR. MILLER: Object to form.

14           THE WITNESS: So I ran this study. I have  
15          data. I observed the reaction to votes being  
16          flipped for the presidential contest in particular.  
17          Those reactions were not subtle, number one.

18           Number two, leading up to the election,  
19          there were allegations that the election would be  
20          stolen. So voters all were prepped for mischief,  
21          and in many voters' minds, that this thing was fixed  
22          and in my study, voters said that.

23           I had a participant in particular tell me,  
24          after I did the study, "So that's how they stole the  
25          election," quote/unquote.

1           So what -- the scenario that I am giving  
2           you, that I am 100 percent confident that would have  
3           played out, would have been a voter would have gone  
4           to the media, would have gone to others. This would  
5           have blown up that the machines were flipping votes.  
6           There's no way that this would have gone unnoticed.

7           In particular, in Georgia, in the year  
8           2020, no. There's no scenario where that would have  
9           gone through -- the human condition would not have  
10          allowed that with all that was happening before the  
11          election, during, and afterwards.

12         BY MR. CROSS:

13                 Q    Again, the study that we're talking about  
14                 here that you keep referring to is on your new BMD  
15                 prototype, right?

16                 A    Exactly.

17                 Q    Is it your understanding that no one  
18                 reported at any point in the 2020 presidential  
19                 election that their vote was flipped on a BMD?

20                 A    No. My understanding -- I have not heard  
21                 reports of a vote being flipped or votes being  
22                 flipped in Georgia on the Dominion BMD.

23                 Q    But you have heard reports of -- I'm  
24                 sorry. Strike that.

25                 You have heard reports of voters claiming

1       that their vote was flipped on voting election  
2       equipment in other states, right?

3               A     Yes, of votes being flipped on screen, I  
4       have heard that, and I've done a video on YouTube to  
5       address that.

6               So since you brought that up, that's  
7       another example of the work I do in election  
8       security to fix and secure things.

9               There was an allegation that votes were  
10      being flipped, and the community and election  
11      security and cybersecurity went to the code and  
12      looked deep into the system.

13              And when I saw what was happening, it's  
14      what I call a finger roll, where they were  
15      inadvertently touching the bottom of a button for  
16      another candidate. And we designed a solution to  
17      that, and our solution has never had a vote flipped.

18              So again, solved.

19              Q     Are you aware of any situation where a  
20      state or county has conducted an investigation to  
21      determine whether their election system was hacked  
22      based on a complaint from a voter or poll worker  
23      that the system did not accurately record the vote  
24      that was cast by the voter?

25              A     That I'm not aware of. And I'm not

1 surprised by that for many -- before BMDs, we had  
2 DREs. And with DREs, there would be no way for a  
3 voter to determine if their vote was recorded at all  
4 or accurately or inaccurately. So that doesn't  
5 surprise me from that perspective.

6 Q But BMDs have been in use in a variety of  
7 locations for at least a few years, and you're not  
8 aware of any such investigation, right?

9 A I am not aware of any such investigation.

10 Q Again, returning to your hypothetical in  
11 your declaration -- sorry -- with the 832 spoiled  
12 ballots, what would you expect would happen if 832  
13 voters in that election falsely claimed -- they were  
14 lying -- that their ballots had been flipped by the  
15 BMD?

16 A Well, I don't know the protocols in the  
17 state, so I can't say what would actually occur.

18 I have recommendations that I could give  
19 to help with that, but again, I would say I know  
20 protocols had to -- if they don't exist, they will  
21 exist for these scenarios given what happened in  
22 Arizona, which was using hand-marked paper ballots,  
23 and allegations of ballot stuffing and all kinds of  
24 other things proliferated in an election with  
25 hand-marked paper ballots.



1 Q Are you talking about the recent election?

2 A Yes.

3 Q And they conducted an audit --

4 A Yes.

5 Q -- with the hand-marked paper ballots, not  
6 only verifying the results, but actually found that  
7 there were additional ballots for Biden that had not  
8 been counted, right?

9 A Yes. That's what happened. But my point  
10 is that a false accusation of tampering I suspect is  
11 just the new normal or a temporary normal, that  
12 that's going to happen.

13 Q One more reason why we need election  
14 equipment that is as secure as it reasonably can be,  
15 right?

16 A I -- I agree with that statement, and --

17 Q In fact, that's why you've offered  
18 developing your BMD prototype, right, is to --  
19 that's the improvement you're offering with that  
20 prototype, is to address these types of concerns; is  
21 that fair?

22 A I think that's fair. I'm trying to  
23 improve the environment so that we can do some of  
24 those things.

25 And I'm working on the next evolution of

1 your question. Dr. Appel and others have asked me  
2 that -- brought that scenario to me, meaning if  
3 indeed someone makes a claim that this machine is  
4 hacked, what do the election administrators do? So  
5 I'm working on that now.

6 So I will say this for the record: In  
7 2022, I will have a resolution to that as well, and  
8 I'm hopeful that Dr. Halderman and the others here  
9 will participate in that evaluation. I'm hopeful  
10 they will do that.

11 Q And you've sort of anticipated where I was  
12 going to go with the -- as you put it, the evolution  
13 of my question.

14 In this -- and maybe this is where you're  
15 going to go in 2022.

16 But the question I will ask, I guess, is,  
17 in today's environment with the election system that  
18 currently exists in Georgia, do you have some view  
19 on how the Secretary of State or the county is  
20 supposed to determine when it's appropriate to  
21 conduct an investigation of whether the system has  
22 been hacked or not?

23 Because you've testified that a single  
24 vocal voter saying their vote is flipped plausibly  
25 should lead to that investigation, but the state and

1 counties could find themselves conducting all sorts  
2 of investigations every time somebody makes a claim,  
3 right?

4 MR. MILLER: Objection. Calls for  
5 speculation.

6 THE WITNESS: I have some work that I'm  
7 doing in that area which is confidential at the time  
8 that I'm not privy to talk about, unfortunately.

9 But to kind of help with that question,  
10 that is something that needs to be addressed. I  
11 don't -- I don't know what the protocols are in  
12 Georgia or any place where, you know, these things  
13 happen with paper ballots. They just spoil it, and  
14 you do it over. And that's -- that's essentially  
15 what happens if there's a mistake found.

16 But, like, in Florida in 2018 when all  
17 those undervotes happened, and South Florida,  
18 Broward County, some people spoiled their ballots or  
19 had an issue, and they were able to get it right.  
20 But no one thought that, "Wait a minute, we have a  
21 problem here."

22 So it can happen on both sides.

23 BY MR. CROSS:

24 Q I think you testified a moment ago that  
25 with DREs, there would be no way to determine

1       whether a vote was flipped because there's no paper  
2       trail. But that's true of BMDs as well, right?

3               If a voter comes and says, "Hey, this  
4       ballot flipped my vote," the poll worker has no  
5       ability to determine whether that's accurate looking  
6       at the ballot or looking at the BMD, right?

7               A     In the current state, meaning the current  
8       state of BMDs, if that was to happen, the poll  
9       worker could not determine if it was a mistake on  
10      the voter's part or the -- an error or anything like  
11      that. I don't know how they would determine it by  
12      just looking at the paper itself.

13              MR. MILLER: David, I'm not sure where you  
14      are on your outline, but at an appropriate time, I  
15      think a short lunch break might be good.

16              MR. CROSS: Sure. We're almost at a  
17      breaking point.

18              Q     Do you mind just a few more minutes,  
19      Dr. Gilbert?

20              A     I'm fine.

21              Q     Okay. So take as an assumption based on  
22      what I was able to look up that approximately  
23      5 million voters voted in the presidential election  
24      in Georgia in 2020. Okay?

25              A     Okay.

1           Q    Do I understand correctly that it's your  
2   opinion that if a small number, say as few as one, I  
3   think you said, voters were to report to a poll  
4   worker that they thought the BMD flipped their vote  
5   in that election, you expect that that would spur  
6   the state into an investigation to determine whether  
7   the election system itself was hacked and flipping  
8   votes.

9                   Do I understand that right?

10           MR. MILLER:  Objection.  Misstates  
11   testimony.

12           THE WITNESS:  Right.  That's -- okay.  
13   What I'm saying is that a vocal person who had one  
14   vote flipped could make a difference in getting an  
15   investigation started.

16                   Now, it's unlikely that only one would  
17   speak up.  Based on the evidence of my study, I  
18   don't think -- especially in 2020 in that  
19   election -- and by the way, the 5 million that  
20   you're quoting, if I'm not mistaken, that includes  
21   both in-person and absentee ballots.

22                   So I don't know what the total in-person  
23   who actually voted with the BMD would have been.  I  
24   don't know that tally.  But I don't think the  
25   5 million is all BMD, if I'm not incorrect on that.

1 But yeah, I think that what I'm getting  
2 at, the point that I'm making is a small number of  
3 individuals whose votes get flipped would speak up,  
4 and this would -- I don't know what the protocols  
5 are or the steps are. Again, that's something we're  
6 working on, what to do when this occurs. But I  
7 don't know what the scenarios are currently in place  
8 for something like this.

9 MR. CROSS: Let's go off the record.

10 THE VIDEO OPERATOR: Okay. Going off the  
11 record at 1:08.

12 (Recess, 1:08 p.m. - 1:45 p.m.)

13 THE VIDEO OPERATOR: Back on the record at  
14 1:45.

15 BY MR. CROSS:

16 Q Dr. Gilbert, we've talked about a couple  
17 of ways that you've identified where hand-marked  
18 paper ballots can be altered such as with changing  
19 undervotes and overvotes, right? We talked about  
20 that today?

21 A Right.

22 Q That can only happen after the ballots  
23 have been tabulated in a system where the ballots  
24 are tabulated on the scanner in the polls, right?

25 A It happens whenever the opportunity

1 presents itself. So it depends on the precinct and  
2 how they handle their ballots. If they -- do the  
3 voters automatically do it? Is it a centralized  
4 tally? It just depends on the scenario.

5 Q So let's talk about a specific scenario, a  
6 scenario in which Georgia has voters vote on  
7 hand-marked paper ballots at the polls. That voter  
8 takes that ballot, walks over to the scanner in  
9 exactly the way they do today, and puts it into the  
10 scanner themselves.

11 The only way that that vote could be  
12 altered or that ballot could be altered in the way  
13 that you've described would be after it runs through  
14 the scanner and is tabulated, right?

15 A In that particular scenario, that seems to  
16 be the case.

17 Q And so whatever alteration might happen to  
18 that ballot after it's tabulated would not affect  
19 the outcome of that election based on the results  
20 that come out of the tabulation of the ballots,  
21 right?

22 A Not necessarily.

23 My understanding is that certain margins  
24 require an audit or recount; therefore, it would  
25 have an impact.

1           Q    Only if it was within the margin that  
2           required an audit or a recount, right?

3           A    On that scenario, I think that's right. I  
4           haven't thought this in detail to see if there's a  
5           way to circumvent direct insertion into the scanner,  
6           but my initial thoughts are yes. If it's outside  
7           the margin, it would -- no one would know that it  
8           was modified and it would never get tallied as  
9           modified.

10          Q    And because Georgia law doesn't provide  
11          any provision whereby a different result in an audit  
12          allows the election results to be set aside, even  
13          if -- even if the audit comes up with a different  
14          result because of manipulation after the ballot is  
15          initially tabulated, there's no way to change the  
16          election outcome, right?

17               MR. MILLER:  Objection.  Calls for a legal  
18          conclusion.

19               THE WITNESS:  I don't know.

20          BY MR. CROSS:

21          Q    That's not something you've considered for  
22          your opinions in this case; is that fair?

23               MR. MILLER:  Same objection.

24               THE WITNESS:  I don't -- again, I'm here  
25          to talk about ballot-marking devices and not the



1 policies and protocols that the state has adopted.

2 I'm not familiar with how that would work  
3 as far as what the rules are on that particular  
4 case, so I don't know.

5 BY MR. CROSS:

6 Q How can you offer an opinion on whether  
7 the state should continue to use its BMDs without  
8 understanding the particular policies and protocols  
9 that are in place in the state to secure that system  
10 and to verify that votes are counted as intended?

11 MR. MILLER: Objection. Misstates  
12 testimony.

13 THE WITNESS: I can offer an opinion on  
14 the technology with respect to its security,  
15 accessibility, usability, in the context of voters  
16 and common protocols. And, you know, as far as  
17 policies around, you know, audits, what triggers an  
18 audit and things like that, that's not my area, and  
19 how that would work, I don't know.

20 So that's how I can give expertise in this  
21 matter.

22 BY MR. CROSS:

23 Q When you say you can offer an opinion on  
24 the technology with respect to its security, you  
25 don't mean cybersecurity, right?

1           A    Again, I am an expert in election  
2   security. I am not using the term "cybersecurity."

3                    Could you define "cybersecurity" as it  
4   relates to elections?

5           Q    That's exactly what I was going to ask  
6   you, Dr. Gilbert.

7                    When you say that you're an expert in  
8   election security but not cybersecurity, what's the  
9   distinction you're drawing?

10          A    Cybersecurity would be, like, hacking  
11   banks. Typically, as an example, people who hack a  
12   bank and steal money, that's an area that I would  
13   classify as cybersecurity.

14                    Election security involves paper ballots  
15   and overvote hacks, as I described, or undervote  
16   hacks. Cybersecurity doesn't involve paper at all.  
17   Election security does.

18                    So those are just some examples of  
19   differences from my perspective.

20          Q    So you're an expert on election security  
21   with respect to, like you said, things like hacking  
22   the paper, but not on the cybersecurity that gets to  
23   the computer equipment that's used in elections?

24          A    No, I did not say that. No.  
25   Cybersecurity -- so this is a question.

1           What you're saying, security as it relates  
2           to computers is cybersecurity. Is that what you're  
3           saying?

4           Q    Yes.

5           A    I disagree. No, I do not agree with that.

6           Q    You think cybersecurity is something other  
7           than security that relates to computers?

8           A    No. Cybersecurity relates to computers,  
9           but not all computing situations are a form of  
10          cybersecurity. I don't view it that way.

11          Election security, election systems, I  
12          would not classify as cybersecurity.

13          Q    Really?

14          A    Not all --

15          Q    You're going to stand by that?

16          A    I don't classify -- so valid marking  
17          device security. I could see, like, online voting.

18          Online voting, I could see people -- my  
19          colleagues have always said that's cybersecurity  
20          because it's a network and things like that. I  
21          don't -- I do not classify election security as  
22          cybersecurity. I would not call it that. It's much  
23          broader than just the computers. I wouldn't do  
24          that.

25          Q    Okay. Don't election security experts,

1       like those in this case and others, routinely talk  
2       about needing to address cybersecurity  
3       vulnerabilities with election systems that use  
4       computer equipment?

5               A     Yes, they do. Absolutely they do because  
6       they are cybersecurity experts. Exactly. Thank  
7       you. That's exactly right. They I would classify  
8       as cybersecurity experts. They hack things that are  
9       not election systems. They work with computers that  
10      are not election systems. Yes. I would classify  
11      them as such. Cybersecurity, that's who they are.

12             Q     But those same experts routinely work with  
13      election security -- election systems and, in fact,  
14      focus on election systems, many of them, right?

15             A     I wouldn't say "many." I would say  
16      Dr. Halderman may focus, but --

17             Q     What about Rich DeMillo? Are you familiar  
18      with him?

19             A     Vaguely. I don't know what all Rich works  
20      on, so I can't speak to Rich's background.

21                     But there's so many of them who just tap  
22      into elections when it's hot, but they're doing all  
23      kinds of things in the cybersecurity space outside  
24      of that.

25             Q     Are you familiar with Wenke Lee?

1           A     With who?

2           Q     Wenke Lee, W-E-N-K-E.

3           A     I don't think so.

4           Q     Are you familiar with the SAFE Commission  
5     in the State of Georgia?

6           A     I've seen it, but I don't know much about  
7     it.

8           Q     Are you aware that when Governor Kemp was  
9     Secretary of State, he created a commission called  
10    the SAFE Commission which was supposed to look at  
11    whether to -- one of the things it was supposed to  
12    look at was whether to replace the DRE system with a  
13    new election system that would be secure and  
14    reliable and how they might do that?

15                   MR. MILLER:  Objection to form.

16                   BY MR. CROSS:

17           Q     Have you ever heard of that?  Do you know  
18    what I'm talking about?

19           A     I don't think so.

20           Q     Do you consider yourself a computer  
21    scientist?

22           A     Yes.  I have a Ph.D. in computer science  
23    and a master's degree in computer science.

24                   (Exhibit 4 was marked for identification  
25    and is attached hereto.)

1 BY MR. CROSS:

2 Q Grab the next -- it's going to be  
3 Exhibit 4. It should pop up. Just let me know when  
4 you have it.

5 A Okay. I found it. Exhibit 4, got it.

6 Q Do you see that this is an article  
7 entitled "Why computer scientists prefer paper  
8 ballots," published on January 10 of 2019?

9 A Okay. I see it.

10 Q Do you see the author is indicated as  
11 Wenke Lee, a professor at Georgia Tech?

12 A Okay.

13 Q Do you see that he indicates here, "Today,  
14 Georgia's 'Secure, Accessible and Fair Elections  
15 (SAFE) Commission' delivered to the state  
16 legislature a final recommendation for new, more  
17 reliable election equipment"?

18 Do you see it?

19 A Yes, I see that.

20 Q And he goes on to say, "I was honored to  
21 serve as a cybersecurity expert for the SAFE  
22 Commission to help improve a process at the very  
23 core of democracy - secure elections and the right  
24 to a private vote."

25 Do you see that?

1           A     Yes.

2           Q     And do you understand that when Governor  
3     Kemp was the Secretary of State, he personally  
4     selected Wenke Lee to serve as a cybersecurity  
5     expert on the SAFE Commission specifically to help  
6     determine a more -- new and more reliable election  
7     equipment?

8           A     Okay.

9           Q     Do I understand correctly that you think  
10    cybersecurity experts don't have the necessary  
11    expertise to opine on election security?

12               MR. MILLER:  Objection.

13               THE WITNESS:  No, I never said that.  No,  
14    that's incorrect.

15    BY MR. CROSS:

16           Q     In fact, we agree that cybersecurity  
17    experts like Wenke Lee, Dr. Halderman, Dr. Appel,  
18    have the necessary expertise to evaluate the  
19    security of election equipment like BMDs in Georgia,  
20    right?

21               MR. MILLER:  Object to form.

22               THE WITNESS:  No, I didn't say that,  
23    either.

24               Dr. Appel, Dr. Halderman, I would agree  
25    with.  I know them.  I don't know Dr. Lee and his

1 background, so I cannot speak to his credentials.

2 The fact that he was appointed to some  
3 commission and given a title does not guarantee he  
4 knows what he's doing or his credentials. So I  
5 can't speak to that. I'm sorry.

6 BY MR. CROSS:

7 Q No, no. That's fair. That's fair.

8 You're not disputing that experts like  
9 Dr. Halderman and Dr. Appel have the necessary  
10 computer science expertise to evaluate the security  
11 of election systems like that used in Georgia,  
12 right?

13 A No, I do not dispute that. In fact, if I  
14 was asked the question, "I have an election system.  
15 We need someone to evaluate the security of it to  
16 find vulnerabilities," at the top of my list would  
17 be Appel, Halderman. That's where I would start.

18 Q Now, if you look here, if you continue on  
19 in Exhibit 4, Dr. Lee goes on to say, "I ultimately  
20 chose to vote against the Commission's final report  
21 even though we agreed on many points."

22 Do you see that?

23 A Yes.

24 Q If you go to the next paragraph, he  
25 writes, "The SAFE Commission was charged with



1 studying options for Georgia's next voting system."

2 Do you see that?

3 A Yes.

4 Q Do you understand that the SAFE Commission  
5 recommended the BMD system that ultimately was  
6 adopted by the state, a BMD system with QR codes?

7 A Okay. I guess so.

8 Q You just don't know one way or the other?

9 A Yeah, I don't know one way or the other.

10 Q Do you know whether Dr. Lee objected as  
11 the cybersecurity expert on the SAFE Commission to  
12 the state adopting the BMD system that it has today?

13 A Until today, I don't think I've ever heard  
14 that name, so I cannot say that I know.

15 Q So before today, were you aware that the  
16 state previously engaged two election security  
17 experts, Michael Shamos and Wenke Lee, and both of  
18 them advised against the election system, the BMD  
19 system that the state uses today?

20 MR. MILLER: Object to form.

21 THE WITNESS: I was not aware of that.

22 BY MR. CROSS:

23 Q Before today, you were not aware that you  
24 were the only election security expert the state has  
25 engaged -- of the election security experts the

1 state has engaged who still endorses the system  
2 that's used today? You didn't know that?

3 A No, I didn't. I was not aware of that.

4 Q Does that affect your opinions at all on  
5 whether the -- the state should continue to use the  
6 current election system in some form?

7 A No, it doesn't.

8 And just point of verification. If I'm  
9 not mistaken, Dr. Halderman's declaration did not  
10 say that -- they said keep the system, but only have  
11 people with disabilities use it.

12 So they didn't reject using it in the  
13 state. Is that correct?

14 Q Well, that's a question for Dr. Halderman,  
15 and I'll let him answer that. I'm happy to give you  
16 my understanding, but I suspect Mr. Miller does not  
17 want me to testify here today.

18 A So let me make it a broader question.

19 Q Okay.

20 A Can you find me the election security  
21 expert who says that BMDs should not be used by  
22 anyone ever? Find me that individual.

23 Because my understanding, Appel,  
24 Halderman, the entire community was supportive of  
25 them, but only for people with disabilities.

1 But I would appreciate if you could  
2 document for the record who Wenke Lee or whoever --  
3 find me the individual that says they should not be  
4 used by anyone.

5 Q Is it your understanding that election  
6 security experts like Dr. Halderman and Dr. Appel,  
7 that they support the use of reasonably secure BMDs  
8 for those who need them, but they otherwise think  
9 that hand-marked paper ballots are the most reliable  
10 election system?

11 Is that a fair statement of how you  
12 understand their views?

13 MR. MILLER: Object to form.

14 THE WITNESS: I would -- I think they  
15 would say hand-marked paper ballots should be used  
16 by everyone except people with disabilities. I  
17 think that's where they stand on this. BMDs should  
18 only be used by people who have a disability.

19 BY MR. CROSS:

20 Q But you understand --

21 A That's my understanding.

22 Q And you understand their view, though, is  
23 not just any BMDs, but the BMDs themselves still  
24 should be reasonably secure and reliable, right?

25 A I hope, Mr. Cross, that you are right. I

1 would like to make sure this is known on the record,  
2 what you just said, which is that Dr. Halderman,  
3 Appel, et cetera, have a notion of a secure or  
4 reasonably secure BMD.

5 I have never heard them use that language,  
6 and I would love to see documentation of what they  
7 see as a secure, reasonably secure BMD.

8 Q It's your position that Dr. Halderman and  
9 Dr. Appel have never offered an opinion that BMDs  
10 can be appropriate for those who need them, people  
11 with particular disabilities?

12 A It's my opinion that Dr. Halderman -- none  
13 of them -- no one on the election security side, who  
14 comes from a cybersecurity background in particular,  
15 has ever declared any computing system secure as far  
16 as I know, especially in elections.

17 So I would love to see Dr. Halderman or  
18 any of them document what is a reasonably secure  
19 BMD.

20 Q You understand evaluating the  
21 reasonableness of the security of a BMD when it's  
22 used for only a very, very small portion of voters  
23 is a different analysis than when it's used for all  
24 voters, right?

25 A I understand that's the ideal situation

1       that they propose.

2               But as in my declaration, I made it clear,  
3       for example, BMDs have empowered people with  
4       disabilities. And in many places, the number of  
5       people who vote on a BMD with a disability exceeds  
6       the margin of victory.

7               So as I explained, that actually weakens  
8       election security because that's an easier target.

9               So again, I would love to see, if it  
10       exists, any of them to tell me what is a reasonably  
11       secure BMD for people with disabilities. What would  
12       they accept?

13              Q     Well, how about a BMD that addresses all  
14       the vulnerabilities that Dr. Halderman has  
15       identified with the Dominion BMD?

16              A     Again, I would love to have Dr. Halderman  
17       on the record saying that. I don't believe -- so I  
18       could be wrong, but I don't believe he can say that.  
19       I don't think he will say that.

20              Dr. Halderman's expertise is breaking  
21       things. If something is fixed, I don't think he's  
22       happy with that. So I would love to see any of  
23       them -- find me one of your experts that's willing  
24       to document what a reasonably secure -- even if we  
25       address them, I suspect they would say it's possible

1 to address them maybe. They may say that as a way  
2 to avoid that. But there's no way they would claim  
3 a reasonably secure BMD.

4 If such a scenario existed, meaning they  
5 actually believed there was something reasonable,  
6 that would have been documented by now. We've been  
7 doing -- dealing -- going around in this case alone  
8 for how many months, and they've never proposed that  
9 or never said that.

10 Q So how about paragraph 17 of Dr. Appel's  
11 reply declaration where he points out that  
12 "Dr. Gilbert discusses the use of BMDs by voters  
13 with disabilities. Indeed, voters with severe or  
14 total vision impairment will have difficulty  
15 verifying a BMD printed ballot. Therefore, voters  
16 with disabilities who use a BMD are at least as  
17 vulnerable to BMD hacking as any other voters. In  
18 my opinion, it would be a reasonable policy to  
19 preserve several options for voters with  
20 disabilities. Voting by mail on a hand-marked paper  
21 ballot, perhaps with the assistance of a person they  
22 trust to mark the ballot, voting by BMD, and so on.  
23 But that is not a reason to needlessly subject  
24 voters who can mark a paper ballot by hand to the  
25 risk of their vote being stolen by computer

1       hacking."

2                   Do you recall reading that in his  
3       declaration?

4           A     Vaguely. I don't know if I read it, but  
5       we talk a lot, so I've heard him say those things  
6       before. And I always reply the same way.

7                   If it's okay for me to have someone mark  
8       my ballot on my behalf, how would you like it if we  
9       required everyone to have that? Why is it okay for  
10      one population but not another when it's perfectly  
11      capable of marking their ballot independently?

12                   So again, it doesn't address the issue  
13      that I point out, which is that because the number  
14      of people with disabilities is increased, your  
15      original question here dealt with a small number of  
16      people, but that has exploded.

17                   The two paces out of the two in the sense  
18      that these people have been empowered, and now they  
19      vote in larger numbers, which exceeds a lot of  
20      margins of victory.

21           Q     Let's pause on that because you keep  
22      saying that, and it's just not accurate, as  
23      Dr. Appel points out in his declaration, right?

24                   You're using an overall aggregate number  
25      of people with disabilities voting in elections

1       rather than looking at the number who actually need  
2       to vote on BMDs, right?

3               A    No.  I don't -- there's data that comes  
4       out of Rutgers that records how many people vote  
5       with a disability.  We've gotten that data in the  
6       past.  I don't have that off the top of my head.

7               Q    A disability of any kind, right?

8               A    I have to go look, but it may be  
9       disability of any kind.

10              Q    In fact, if you look at your declaration,  
11       and look at paragraph 14, you indicate that Georgia  
12       has an estimated 700 -- sorry.  Try that again.

13                     You state that "Georgia has an estimated  
14       797,000 eligible voters that are disabled, and their  
15       recent report estimates that disabled voters'  
16       turnout rate was 62.8 percent of those Georgians who  
17       voted in 2020."

18                     Do you see that?

19              A    Yes.

20              Q    You go on to say that "In 2020  
21       approximately 500,516 disabled Georgians voted in  
22       2020.  This number is, of course, well beyond the  
23       margin of victory in the presidential election,"  
24       right?

25              A    Yes.



1           Q    As Dr. Appel points out in his response,  
2           that is remarkably misleading because only a tiny  
3           fraction of those people with disabilities could not  
4           vote on hand-marked paper ballots.

5                     That is a fact; right, sir?

6           A    No, I don't agree with that. Because at  
7           the same time, he's actually making another error,  
8           which is, there are people who don't have a  
9           proclaimed disability who also need it, but they  
10          don't say they have a disability.

11                    So to say that there are people with a  
12          disability who don't need it, you don't -- you've  
13          got to account for the people who claim they don't  
14          have one who do need it.

15          Q    Where in your declaration do you identify  
16          specifically the number of voters who voted in the  
17          2020 election in Georgia who have a disability that  
18          would make it impossible for them to vote on a  
19          hand-marked paper ballot? Where can I find that  
20          number?

21          A    That number is not in my declaration. And  
22          where in Dr. Appel's rebuttal does he give the  
23          specific number of people who use the machine who  
24          had a proclaimed disability who did not need it? Is  
25          that number documented by Dr. Appel?

1           Q    You don't think it's misleading to suggest  
2   that all voters who identify as disabled have to  
3   vote on a BMD?

4           MR. MILLER:  Objection.  Asked and  
5   answered.

6           THE WITNESS:  I do not think it's  
7   misleading to say that.  I'd say it is correct to  
8   say that all voters with a disability have the right  
9   to a private vote, and the BMD gives them that  
10  ability.

11           For example -- here's another scenario I  
12  will give you that Dr. Appel would miss, and I  
13  suspect many of your experts.  There are people with  
14  cognitive disabilities.  Those individuals voting on  
15  paper is much more of a challenge or impossible for  
16  some of them.

17           We use Prime III, our open source voting  
18  system, with a group, an organization, that  
19  represents people with cognitive disabilities.

20           So I'm fully aware that this is the  
21  scenario, meaning there are individuals who appear  
22  to not need this type of engagement, but they do.

23  BY MR. CROSS:

24           Q    Again, you understand Dr. Appel, in  
25  responding to you, specifically said that voters

1 with disabilities should be allowed to vote by BMD  
2 if that's what they need or choose.

3 There's no disagreement between you and  
4 him on that, right?

5 A Voters -- there's no disagreement that  
6 voters with disabilities have that access. There's  
7 no disagreement on that.

8 Q In terms of the accuracy of what you're  
9 saying about disabilities, Dr. Gilbert, I will tell  
10 you, I was born without a left hand. I am disabled.

11 Would you include me among your voters who  
12 has to have a BMD, who cannot vote on a hand-marked  
13 paper ballot?

14 A I don't include anyone. That's a judgment  
15 to the voter who would be doing that.

16 Q In fact, you include everyone. You  
17 include everyone who identifies as disabled in  
18 paragraph 14 of your report, which is misleading,  
19 isn't it, sir?

20 MR. MILLER: Objection.

21 THE WITNESS: No, it's not misleading,  
22 because all of them may -- we don't -- you can't --  
23 you asked me the question, where in my report did I  
24 document the number that needed it. So I posed a  
25 question, where in those numbers can you identify

1       those that do not? How do you know that all of them  
2       did not need it?

3       BY MR. CROSS:

4               Q     But you understand in an election system  
5       that allows hand-marked paper ballots as one option,  
6       BMDs as another option, that anyone who has a  
7       disability that needs a BMD would have that  
8       available to them as a choice, right?

9               A     That's the presumed assumption. And in my  
10      declaration, I clearly said when those scenarios  
11      happen, what's called a separate but equal  
12      connotation, that doesn't play out well, and I  
13      explain that in my declaration. I can elaborate on  
14      that if necessary.

15              Q     You understand that many jurisdictions, in  
16      fact most jurisdictions in the country that use  
17      BMDs, use them in the way I just described for  
18      people with disabilities and most voters vote on  
19      hand-marked paper ballots; you're aware of that,  
20      right?

21              A     Yes, I'm aware of that.

22              Q     Can you point to any situation where votes  
23      have been stolen, altered, or election outcomes have  
24      been altered in those jurisdictions?

25              A     I am not aware of any situation that is

1       evident of votes being stolen, altered, by a BMD in  
2       the United States of America.

3               Q     Given your view that BMDs, even as they  
4       are right now, are sufficiently reliable, then how  
5       does it hurt people with disabilities who vote on  
6       BMDs to continue to do that in a world where other  
7       voters vote on hand-marked paper ballots since you  
8       say the BMDs are just as reliable, if not more so?

9               MR. MILLER:   Objection to form.

10              THE WITNESS:   Because when you go to the  
11     polling, this is documented.   When people -- when  
12     the disability go to a polling place, the accessible  
13     voting machine is set aside, and it's not set up in  
14     a lot of cases because it would get infrequent use  
15     in some places.   That's scenario one.

16              Scenario two, if you believe in  
17     Dr. Halderman and others that the machines could be  
18     compromised, if I'm an adversary, I definitely want  
19     to try and target them now because, again, the  
20     margins of victory could be small enough such that  
21     it's easy to target a person who can't read a ballot  
22     at all and have them produce a paper ballot.

23              So by having a diversity of people using  
24     that same approach, you at least have the chance, as  
25     I mentioned earlier, to have someone identify and

1 say, "No, no, this is misbehaving," whereas if it's  
2 only people with a disability using it, your chances  
3 of success of an attack are increased.

4 BY MR. CROSS:

5 Q I'm getting confused here, Dr. Gilbert.

6 You're saying that there were hundreds of  
7 thousands of disabled Georgians who voted in 2020  
8 where you suggest some significant number or maybe  
9 all of them need a BMD, but you say in a world where  
10 they have the choice of hand-marked paper ballots or  
11 BMDs, BMDs are infrequently used.

12 Why are BMDs infrequently used when  
13 there's a choice if there are hundreds of thousands  
14 of voters who need them?

15 A It depends on the precinct.

16 Q The reality is that we have -- in  
17 jurisdictions that allow both BMDs and hand-marked  
18 paper ballots, as you rightly point out, there is  
19 infrequent use of the BMDs because there actually is  
20 a very small number of voters who need them and  
21 choose to use them when they have the choice; right,  
22 sir?

23 MR. MILLER: Objection to form.

24 THE WITNESS: I don't agree with that. It  
25 depends on the precinct. It varies.

1 BY MR. CROSS:

2 Q And that is true for most precincts.  
3 That's literally the concern you just testified to,  
4 is the infrequent use of them when there's a choice,  
5 right?

6 A No, no. That's -- no, you're putting  
7 words in my mouth.

8 What I said, there are -- it depends on  
9 the precinct. There are precincts that get low  
10 utilization, but there are others that would get  
11 higher utilization.

12 Q Where can I find that data in your  
13 declaration?

14 A It's not in my declaration, but the  
15 reference is there to Rutgers. That's the source.

16 So if you needed that, I would go to  
17 Rutgers and get that. I would gather to say, in  
18 particular -- Rutgers is in the city -- I bet you  
19 they -- the cities in particular would have higher  
20 turnouts and uses of this equipment.

21 So it varies. There's a variance  
22 depending on where you are.

23 Q So it's your opinion that every  
24 jurisdiction in the country that has hand-marked  
25 paper ballots as the primary option and BMDs as an

1 option for those who need them as a disability or  
2 otherwise choose to use them, those jurisdictions  
3 should not be handling elections in that way; that's  
4 your opinion; is that fair?

5 MR. MILLER: Objection. Misstates  
6 testimony.

7 THE WITNESS: My opinion, I would prefer a  
8 uniform BMD approach. That would be my  
9 recommendation.

10 BY MR. CROSS:

11 Q We talked earlier about -- I think I may  
12 have gotten the math wrong so I want to come back to  
13 this.

14 I gave you an election situation where the  
15 differential was 20,000 votes. Candidate A wins  
16 20,000 votes over Candidate B. And I said to flip  
17 that you'd have to alter over 10,000 votes.

18 Do you remember this discussion?

19 A Yes.

20 Q But actually using the hack that you've  
21 described with hand-marked paper ballots where  
22 you're affecting an undervote or overvote, you  
23 actually would have to flip more than 20,000 --  
24 you'd have to alter more than 20,000 ballots, right?  
25 Because it's not a situation where you're changing a



1 vote, right?

2 A It depends on which attack. If it's the  
3 undervote attack, then you've got to fill in the  
4 oval for 20,000.

5 Q We talked a lot about ballot design  
6 issues, and you've given examples where, like in  
7 Florida, they were able to look at the ballot design  
8 and conclude that the design itself led to some  
9 confusion with voters; is that right?

10 A Not only confusion, but it led to them  
11 making an inappropriate selection.

12 Q And a ballot design problem like that is  
13 assessed by looking at the ballot, looking at the  
14 design.

15 Do I understand that right?

16 A That's one aspect of it. And then you  
17 could test it with particular voters or users. Yes.

18 Q And you referred to that in your  
19 terminology of hacking as a type of hack, right?

20 A Yes, I call that a hack.

21 Q Now, a hack that includes malware embedded  
22 in computer election equipment, like a BMD, that's  
23 not something that a poll worker or an election  
24 worker, election official, could evaluate just by  
25 looking at a ballot or a machine, right?

1           A    I don't understand your question.

2           Q    If there's malware embedded in an election  
3   in a BMD that's flipping votes, okay, changing the  
4   QR codes, for example --

5           A    Okay.

6           Q    -- you couldn't identify that hack by just  
7   looking at the face of the ballot in the way that  
8   you can with a ballot design problem, right?

9           A    Can you identify by -- so what you're  
10   saying is there's malware on a BMD, and it printed a  
11   ballot with a QR code. Could you look at that  
12   ballot that it printed and determine that malware is  
13   on the BMD?

14          Q    Yes.

15          A    That's your question?

16          Q    Yes.

17          A    Yes, you can.

18          Q    And how would you do that?

19          A    If the QR code does not match the  
20   human-readable text, there you go.

21          Q    But you couldn't do that by looking at the  
22   face of the ballot. You'd actually have to run the  
23   ballot through a tabulator, then look at what was  
24   tabulated on the scanner, and then go back and read  
25   the human-readable portion and compare the two,

1 right?

2 A Yes. You have to compare -- you have to  
3 scan it and compare.

4 Q Okay. I guess this is something we talked  
5 about earlier. I want to make sure we're on the  
6 same page.

7 Do you understand that the auditing that  
8 Georgia has done to date is what's called a ballot  
9 polling audit?

10 A Okay.

11 Q Are you familiar with ballot polling  
12 audits?

13 A No, not -- I've heard the term, so you  
14 could refresh my memory.

15 Again, I'm not an expert in audits so this  
16 wouldn't be something that I would have in my  
17 memory.

18 Q Let me ask it this way: Do you understand  
19 that the way Georgia has done audits, including for  
20 the presidential election in 2020, it does not  
21 compare the printed paper ballot to the cast ballot  
22 record that's reflected in the tabulation data?

23 A I don't know. I mentioned I'm not an  
24 expert in audit. That's not my area. I can't speak  
25 to -- to audit. That's just not what I do.

1           Q    You don't know whether that's done in  
2   Georgia or not?

3           A    I don't know.

4           Q    I asked you earlier about whether an audit  
5   could determine whether a specific ballot was cast  
6   as the voter intended. Can an audit do that, or you  
7   just don't know one way or the other?

8           MR. MILLER: Objection.

9           THE WITNESS: Can an audit determine if a  
10   specific ballot was cast as the voter intended?

11           I'm not following what that means. That  
12   doesn't make sense to me.

13   BY MR. CROSS:

14           Q    Okay.

15           A    A proper audit should -- should result in  
16   looking at a ballot where the voter intent is clear.

17           Now, with hand-marked paper ballots, we  
18   know you can have stray marks and other things, and  
19   the determination of what the intent is is  
20   determined by the auditor.

21           That doesn't happen in a ballot-marking  
22   device where you have a ballot summary. If you're  
23   looking at the human-readable portion, I have yet to  
24   see anyone declare that there's ambiguity about that  
25   mark. And the only ambiguity that happens is the

1 claim that, "Well, we don't know if they verified  
2 it."

3 So I would challenge anyone to say, "Okay.  
4 Now I've created a technology that I can give you  
5 the verification. Now tell me how that's  
6 ambiguous." Whereas hand-marked paper ballots, I  
7 could show you examples of ambiguity where it's  
8 determined by the auditor.

9 Q But you understand that the human-readable  
10 portion of a BMD ballot also can be changed by  
11 malware, for example, that then it does not reflect  
12 the intended selections of the voter, right?

13 A How?

14 Q Well, in any of the ways that  
15 Dr. Halderman identifies in his report.

16 A Oh, okay. If -- again, if it's malware  
17 that changes it, and the voter verifies it, and then  
18 they spoil it and do it over and get it right, there  
19 is no ambiguity. We have 100 percent confidence  
20 that there's no -- it's an unambiguous result when  
21 it's verified. That's the statement I'm making.  
22 Maybe that will help.

23 Ballot summaries from ballot-marking  
24 devices yield an unambiguous result, whereas  
25 hand-marked paper ballots can result in ambiguous

1 results that have to be interpreted by an auditor or  
2 third party.

3 Q Again, we know from studies like the Rice  
4 study and the Michigan study and the study  
5 commissioned by the Georgia Secretary of State that  
6 the vast majority of voters do not actually verify  
7 their ballots before they cast them from a BMD,  
8 right?

9 MR. MILLER: Objection. Asked and  
10 answered.

11 THE WITNESS: The studies speak for  
12 themselves.

13 BY MR. CROSS:

14 Q You don't dispute what I just said; right,  
15 sir?

16 MR. MILLER: Same objection.

17 THE WITNESS: I don't dispute what you  
18 said, but I dispute what the outcomes are and the  
19 resolutions to those.

20 So in other words, we talked about trying  
21 to implement interventions, and then we also  
22 discussed that people who would notice would not  
23 ignore.

24 I mentioned earlier the Hawthorne effect  
25 that exists in studies.

1 BY MR. CROSS:

2 Q The audit that was done on the  
3 presidential election in Georgia in 2020, do you  
4 understand that they read the human-readable  
5 portions of the ballots?

6 A I guess so. My understanding was that in  
7 Georgia, they had multiple recounts which required  
8 them to manually read all of them. But okay.

9 Q Are you aware of any steps the state or  
10 any county took to test whether the QR code on any  
11 specific ballot matched the human-readable language  
12 on that ballot?

13 A No, I am not aware of that.

14 Q You understand that malware that flips the  
15 QR code on a significant number of ballots, say  
16 1,000 ballots, so that those ballots aren't counted  
17 the way those voters intended, and the voters did  
18 not have any ability to catch it because it's in the  
19 QR code, an audit would still get to the same  
20 election outcome, but those voters would be  
21 disenfranchised on their individual ballots, right?

22 A No. If you change the QR code but the  
23 human-readable portion of the text is correct and  
24 you do an RLA, you would detect that.

25 Q How would you detect that on those ballots

1 if you're not comparing the QR code to the  
2 human-readable portion on any given ballot?

3 A Okay. So I will -- let me explain it this  
4 way: If the QR code has an improper selection in it  
5 but the human-readable portion is correct, that  
6 means the tally or scanner is going to give you the  
7 wrong result, okay? Do we agree on that?

8 Q Hold on. I lost you for a second. Let me  
9 just look at what you said so you don't have to  
10 repeat it.

11 Yes. Okay.

12 A Okay. So if you do an RLA on a  
13 human-readable portion, that will catch that the  
14 scanner had the wrong outcome.

15 Now, if I'm incorrect -- I know you have  
16 Dr. Stark on your team -- I would pose this question  
17 to him: Please tell me the distinction between  
18 hand-marked paper ballots that go through the  
19 scanner with the correct choices on them but the  
20 scanner gives you the wrong number, whereas a  
21 scanner that has a QR code that's giving you the  
22 wrong number, there is no distinction between them.  
23 And I would love to have a debate with him or anyone  
24 else to show me where there's a distinction.

25 And if he says that you cannot get to the



1 right result of the election with a scanner that is  
2 correct and a QR code that is wrong and the  
3 human-readable portion is the RLA, then he has a  
4 flaw in the risk-limiting audit. And I'd be happy  
5 to have that conversation. I think he's way -- I  
6 think he's very smart, and I think he's right about  
7 the RLA, so I defer to Dr. Stark that the RLA would  
8 catch this. If I'm wrong, he's wrong.

9 Q You understand that the way the RLA  
10 typically works is, it takes a statistical sample of  
11 the ballots that are cast. It doesn't look at every  
12 single ballot in the ordinary course of an RLA,  
13 right?

14 A That is correct, but I would add to that.  
15 I don't need to understand how the RLA  
16 operationally works. What I know is Dr. Philip  
17 Stark has said on many occasions if you have  
18 hand-marked paper ballots and they go through a  
19 scanner and the scanner gives you the wrong result,  
20 the RLA will give you the correct outcome.

21 If Dr. Stark is wrong, then you're right.  
22 The QR code could not be corrected, and Dr. Stark is  
23 wrong.

24 Q You think he's wrong because the -- you  
25 consider the hand-marked paper ballot less reliable

1       than the BMD because voters make mistakes on them?

2               A    No.  I'm saying Dr. Stark is right in the  
3       sense that an RLA will catch a scanner that gives  
4       you the wrong result.

5               Q    Okay.

6               A    And what I'm saying, the scenario that  
7       you're giving me that the QR code is wrong but the  
8       human-readable portion is right is no different than  
9       the scanner giving you the wrong result.  It's the  
10      scanner giving you the wrong result.  It's the exact  
11      same thing.

12              Q    So let's -- let's back up for a second.  I  
13      want to make sure we're on the same page.

14                     In the ordinary course, an RLA uses a  
15      statistical sample of votes -- of the ballots cast.  
16      It doesn't look at every ballot, right?

17              A    Yes.  And let me just say, before you go  
18      on to that, the protocol for the RLA I'm going to  
19      say is not the point here.  I'm not disputing the  
20      protocol.

21                     What I'm saying is -- and I don't know how  
22      to get you to understand this -- is that the scanner  
23      gave me a wrong result with hand-marked paper  
24      ballots.  Dr. Stark says the RLA will correct that.

25                     I don't dispute that.  He is right.  He

1 knows his stuff. Our committees agree with that. I  
2 agree with that.

3 Now, what I'm saying is, your scenario of  
4 a QR code that has a wrong result, but  
5 human-readable portion that's used in the RLA is  
6 scanned, I mean read, there's no difference between  
7 that and a hand-marked paper ballot with a bad  
8 scanner. There is no -- those are identical  
9 scenarios.

10 So if you're going to tell me that, "No,  
11 no, no, no. The RLA will not find -- get you a  
12 correct result if the QR codes are wrong and the  
13 human-readable portion is right," and that's what  
14 you're using for the RLA, then Dr. Stark made a huge  
15 error with the RLAs.

16 So I ask you, is Dr. Stark wrong? Did we  
17 get it wrong in the National Academies? I'm not an  
18 expert in this area. I believe what my colleagues  
19 were saying and what Dr. Stark said.

20 Q Okay. It's remarkable to me that we're  
21 having this conversation, but let me see if we can  
22 do this.

23 Do you understand that in a world where  
24 there are hand-marked paper ballots, and there's --  
25 and there is a problem with -- well, strike that.

1 Let me figure out how to explain this.

2 In a world where the QR codes are used,  
3 and malware flips the QR codes on thousands of votes  
4 across the state, okay, and actually flips the  
5 election outcome, that can be done by malware,  
6 right?

7 A Um-hum. Um-hum.

8 Q Okay. Yes?

9 A Yes. Exactly. Exactly.

10 Q And what you're talking about on the  
11 hand-marked paper ballots, are you suggesting that  
12 those are also miscounted by malware in the scanner?

13 A Exactly. Exactly.

14 Q Right. But a hand-marked paper ballot  
15 system eliminates -- it reduces the vector points by  
16 which the election can be hacked because you can't  
17 get malware into a BMD or a printer; we're agreed on  
18 that, right?

19 A Wait. Wait. So hand-marked paper  
20 ballots, the malware -- if you're injecting malware,  
21 it will be in the scanner.

22 Q Right. So the hand-marked -- with the  
23 hand-marked paper ballot system, there are fewer  
24 vector points or entry points for malware because  
25 you don't have two pieces of computer equipment that

1 are used with BMDs, both the BMD and the printer,  
2 right?

3 A Technically, there are fewer points of  
4 computing devices as it relates to a hand-marked  
5 paper ballot versus a BMD.

6 Q Right. Now let's come back to where we  
7 were. I'm trying to get to a simple point.

8 An RLA is designed to confirm election  
9 outcomes. It is not designed or capable of  
10 confirming that an individual ballot counted the way  
11 it was intended, right?

12 A I'm fine with that. Again, I -- go ahead.  
13 I'm trying to understand your point.

14 I don't think you're understanding my  
15 point about the RLA as it relates to hand-marked  
16 paper -- the scanner giving you the wrong number  
17 because it was hand-marked or if it gave you the  
18 wrong number because of the QR code. No matter  
19 what, it gave you the wrong number.

20 And again, Dr. Stark, who is very well  
21 respected when it comes to these areas, and our  
22 committee acknowledged that, and I find it hard to  
23 believe that he would be wrong about this. I don't  
24 think he's wrong.

25 Q I understand what you're saying. We're

1 getting at different points, but I understand what  
2 you're saying.

3 I asked you earlier, in a scenario where  
4 an RLA finds a different election outcome than the  
5 one that was reported, and I said, "Doesn't that  
6 mean that those voters who had their votes altered  
7 were disenfranchised?"

8 You said, "No, because the RLA has caught  
9 the problem."

10 But again, in the State of Georgia, there  
11 is no legal authority that allows that election to  
12 be rerun. The mere fact that the RLA got to a  
13 different result doesn't mean that those voters are  
14 not disenfranchised, right?

15 MR. MILLER: Objection. Calls for a legal  
16 conclusion.

17 THE WITNESS: I have no comment on that.  
18 I don't -- again, I -- I'm not an expert in Georgia  
19 election law and protocol. That's not what I do.  
20 I'm sorry.

21 BY MR. CROSS:

22 Q Right. So you're not offering an opinion  
23 in this case that RLAs can ensure that any voter  
24 avoids being disenfranchised by a compromise of the  
25 election system in Georgia, right?

1           A     I don't understand that question.

2                     If we had 100 percent hand-marked paper  
3 ballots and you did an RLA and you got a different  
4 result than the scanner, according to what you're  
5 saying, the State of Georgia would not allow the new  
6 result. Is that correct?

7           Q     I really need you to focus on what I'm  
8 asking you here, Dr. Gilbert. At some point we may  
9 just have to call the judge. I'm trying to avoid  
10 that. I need you to focus. I get you want to talk  
11 about your points and hand-marked paper ballots.  
12 I'm asking you specific questions.

13                     My question is this: Are you offering an  
14 opinion that RLAs in the State of Georgia offer  
15 voters assurance that they will not be  
16 disenfranchised if the current election system is  
17 hacked and their votes are changed?

18                     Is that an opinion you are offering in  
19 this case?

20                     MR. MILLER: Objection. Calls for a legal  
21 conclusion.

22                     THE WITNESS: I still don't understand. I  
23 don't understand. I don't understand. Again, I  
24 don't understand how to answer that question because  
25 it just doesn't make any sense to me. I don't know

1       what you're asking me. It just doesn't make any  
2       sense.

3                   I don't understand Georgia law, and I  
4       can't say what Georgia law should be. I don't know.  
5       I don't know how to answer that question.

6       BY MR. CROSS:

7               Q     Okay. In response to the findings that  
8       Dr. Halderman has in his July 1 report, haven't you  
9       said that some of the precautions that the state  
10      could and should adopt -- I think you identified two  
11      things earlier. One was prompting voters to verify  
12      their ballots before they're tabulated, and two are  
13      audits, right?

14             A     Yes.

15             Q     Okay. So what I'm asking you is, isn't it  
16      a fact that an audit does not actually remedy or  
17      protect the vote of any voter against any of the  
18      hacks that Dr. Halderman identifies? Because the  
19      audit is not going to -- even if the audit gets to a  
20      different election outcome, there's no mechanism in  
21      Georgia law to reverse the outcome of that election.

22                   MR. MILLER: Same objection.

23                   THE WITNESS: Is that a question?

24       BY MR. CROSS:

25             Q     Yes.



1           A    Again, I don't know how to answer that.

2                   I think what you're saying is, if an  
3   election happens in Georgia and you get a result  
4   from the machines, and then you do an audit and you  
5   get a different result, you cannot change the  
6   outcome of the election.

7                   Is that what you're saying?

8           Q    I'm asking, are you aware of a mechanism  
9   in Georgia law that would allow the outcome of the  
10  election to be changed in that scenario?

11                  MR. MILLER:   Same objection.

12                  THE WITNESS:   I am not aware of anything  
13   in Georgia law that relates to that.  No.  As I have  
14   said several times before, my expertise is not in  
15   Georgia law.  It's not in election law.  That's not  
16   what I do.

17   BY MR. CROSS:

18           Q    So then what is the basis for your opinion  
19   that running audits in Georgia would prevent voters  
20   from being disenfranchised if the audit finds a  
21   different election result than the one that was  
22   reported?

23           A    That's not what I said.

24                  MR. MILLER:   Objection.

25                  THE WITNESS:   I said I recommend audits as

1 part of the National Academies report as something  
2 we recommend as a best practice, the best way to  
3 secure elections. That's what we said from our  
4 report.

5 BY MR. CROSS:

6 Q Okay. So you are not offering an opinion  
7 that audits can keep voters from being  
8 disenfranchised when their votes have been altered  
9 by a hacking of the system?

10 MR. MILLER: Objection. Calls for a legal  
11 conclusion.

12 BY MR. CROSS:

13 Q That's not an opinion you're offering,  
14 right?

15 A I'm not talking to -- still, I don't know  
16 what you're -- I think what you're saying is, if it  
17 turns out that the scanners give you the wrong  
18 number and you do an audit, you cannot change the  
19 election.

20 I don't have -- I don't know that about  
21 Georgia law. I don't have a recommendation. That's  
22 not what I do.

23 Q Okay.

24 A I can recommended some political  
25 scientists here at the University of Florida who are

1 experts in that area if you need. That's not my  
2 expertise to recommend that.

3 I'm giving you a recommendation that came  
4 from a National Academies committee; that we took  
5 the time to do this evaluation, and we recommended  
6 the audit.

7 And I'm sticking to that recommendation  
8 that was grounded in work on a risk-limiting audit  
9 created by Dr. Philip Stark who I, again, trust that  
10 he had it right. And if that's incorrect, I'm  
11 sorry, but that's the recommendation that came out  
12 of our report, and that's what I'm giving you.

13 (Exhibit 5 was marked for identification  
14 and is attached hereto.)

15 BY MR. CROSS:

16 Q All right. Dr. Gilbert, grab Exhibit 5,  
17 which is Dr. Halderman's sealed report.

18 And I don't want you to read anything out  
19 loud from this. I just want you to go to a specific  
20 page that has something public.

21 So once you've got it, let me know, and  
22 I'll tell you where to go.

23 A All right. Found it.

24 MR. MILLER: David, I presume, by the way  
25 you phrased that, you're aware of this, but I just

1 want to make sure, there are people on the line  
2 other than --

3 MR. CROSS: Yeah.

4 MR. MILLER: Okay.

5 THE WITNESS: I have it.

6 BY MR. CROSS:

7 Q Okay. Go page to page 15, and you'll see  
8 a copy of the Fayette County official ballot.

9 A 15?

10 Q Page 15, and you'll see an image of --

11 A Okay. I got it.

12 Q You have that in front of you?

13 A Yes.

14 Q Okay. How many of the election selections  
15 on that ballot are not Republican selections for the  
16 candidates?

17 A Wait. Say that again. I didn't --

18 Q How many of the selections made on that  
19 ballot are not Republican candidates that were  
20 selected?

21 A Are not Republican? So count everyone  
22 who's not a Republican?

23 Q Correct.

24 A I counted six.

25 Q And point out the ones that you're

1 identifying.

2 A Okay. Number one, Nathan Wilson.

3 Q Okay.

4 A Chris Pigors.

5 Q Okay.

6 A Yes, no, no, no.

7 Q The other four are not candidate  
8 selections, they're issue voting on a yes or no  
9 basis; is that right?

10 A Yeah. They are not Republicans. That's  
11 correct. They are not Republicans.

12 Q Well, they're not any party. They're a  
13 selection of an issue, yes are no?

14 A Well, you asked me to count the number of  
15 not Republicans, and that's what I did. Not  
16 Republicans.

17 Q Right. I just want to make sure we're  
18 talking about the same four things. You're talking  
19 about the four things that are at the end of the  
20 third column, right?

21 A Yes.

22 Q So it's two constitutional amendments.  
23 One is a statewide referendum, and one is Fayette  
24 County School District homestead exemption.

25 Those are the four things you're talking

1 about?

2 A That is correct.

3 MR. CROSS: Okay. All right. While we  
4 have this up, anyone who does not have access to AEO  
5 information needs to drop off, and I think that's  
6 just Marilyn.

7 MR. MILLER: David, how long do you think  
8 you're going to go on this section of questioning?

9 MR. CROSS: Do you want to take a break?

10 MR. MILLER: Yeah. If you're going to be  
11 on it for a while, if you don't mind, just a  
12 five-minute break.

13 MR. CROSS: Sure, that's fine.

14 THE VIDEO OPERATOR: Okay. Going off the  
15 record at 2:43.

16 (Recess, 2:43 p.m. - 2:52 p.m.)

17 THE VIDEO OPERATOR: Back on the record at  
18 2:52.

19 BY MR. CROSS:

20 Q Dr. Gilbert, do you still have  
21 Dr. Halderman's July 1 report in front of you?

22 A Yes.

23 Q Do you still have that Fayette County  
24 ballot on page 15 up?

25 A Yes, I do.

1           Q    In your opinion, is that a well-designed  
2   ballot?

3           A    Did somebody say something?

4           MR. MILLER:  I think we just had a  
5   momentary interruption.

6           THE WITNESS:  I would not have designed it  
7   this way.  It can be done better.

8   BY MR. CROSS:

9           Q    How would you design it better?

10          A    It has a ballot summary, but I wouldn't  
11   have put it in three columns, as an example.

12          Q    Why not?

13          A    It does make it harder to identify  
14   discrepancies if you have the three-column format  
15   like this.

16          Q    How so?

17          A    Because it doesn't allow you to scan all  
18   at once.  You have to do multiple scans, either left  
19   to right multiple times, or top to bottom multiple  
20   times.

21          Q    And just so we're clear, when you say  
22   "scan," you mean the human scanning, not the  
23   electronic tabulator?

24          A    Exactly.  Yeah.  The human read.

25          Q    And then fair to say that you -- as you

1 sit here, you don't have any way of knowing whether  
2 the QR code in that ballot matches the individual  
3 selections below, right?

4 A No, I do not.

5 Q The election equipment from Fulton County  
6 that Dr. Halderman has examined, would you recommend  
7 putting that equipment back into use in Georgia  
8 elections after an independent expert has tested it?

9 A I would -- I would recommend using it  
10 again, but I would recommend consideration to  
11 addressing issues where they can be addressed.

12 Again, one of the recommendations is  
13 focusing on voter verification, as an example.

14 Q So let me be more specific because I may  
15 not have been clear.

16 I don't mean equipment of that type. What  
17 I'm saying is the specific equipment, the machines  
18 that Dr. Halderman did his testing on, would you  
19 recommend putting those machines back into service  
20 in Georgia elections after an independent expert  
21 evaluates them?

22 A I think you can put those back. Again,  
23 even -- even if -- even if they have been  
24 compromised, but if we had 100 percent voter  
25 verification, we would be in a good place.



1           Q    Are there any steps that you would  
2    recommend be taken with those machines before they  
3    go back into service?

4           A    I haven't given that thought. That's not  
5    something I've thought about. Sorry.

6           Q    That's okay.

7                   All right. Take a look at -- go to the  
8    beginning --

9                   Let me just make sure we're all good here.  
10   Yeah. All right. As far as I can tell, everyone on  
11   has access to AEO information. I don't see  
12   Ms. Marks, but Carey, let me know if you've got a  
13   different --

14               MR. MILLER: I think it was -- I think  
15   that's right.

16   BY MR. CROSS:

17           Q    Dr. Gilbert, go to the first page of  
18   Dr. Halderman's report, if you would, and the  
19   heading is "[REDACTED]"

20           A    Hold on here. Let me get there. You said  
21   the heading is -- the contents page?

22           Q    No, no. Sorry. It's the first  
23   substantive page. It's the heading "[REDACTED]"

24           A    Okay.

25           Q    It's page 5 of the blue pagination at the

1 top.

2 A I got it. I got it. I'm on that page  
3 now.

4 Q Okay. If you come down below, do you see  
5 the third paragraph where Dr. Halderman wrote, "[REDACTED]

6 [REDACTED]

7 [REDACTED]

8 [REDACTED]

9 [REDACTED]

10 [REDACTED] "?"

11 Do you see that?

12 A I do see that.

13 Q Were you asked, for the purpose of your  
14 engagement, to conduct the same type of analysis or  
15 were you asked to do something different?

16 A I was not asked to do that. No, I was  
17 not.

18 Q If you come down below, you'll see the  
19 next heading is "[REDACTED]."

20 Do you see that?

21 A Yes, I do.

22 Q And then at the bottom, you'll see, just  
23 before the number 1 paragraph, it reads, "[REDACTED]

24 [REDACTED]

25 [REDACTED]

1 Do you see that?

2 A I do.

3 Q And in your declaration, you don't dispute  
4 that any of the number of vulnerabilities that he  
5 has in paragraphs 1 through 7 are present in the  
6 election equipment used in Georgia, right?

7 MR. MILLER: Object to form.

8 THE WITNESS: Number one, [REDACTED]  
9 [REDACTED] that -- I trust that he was able to do that,  
10 so I don't dispute that.

11 I would say, you know, given access and  
12 time that he was given, I think these -- I don't  
13 question him being able to accomplish any of these.  
14 BY MR. CROSS:

15 Q Come to the -- it's page 7 of 97. Near  
16 the top it says, "[REDACTED] in bold.

17 A Got it.

18 Q Do you see here -- do you see the  
19 sentence, it's the second sentence that begins,  
20 "However"?

21 A Yes.

22 Q And Dr. Halderman wrote, "[REDACTED]  
23 [REDACTED]  
24 [REDACTED]."

25 Do you see that?

1           A    I do.

2           Q    In your declaration, you don't disagree  
3 with that opinion, right?

4           A    I don't agree -- I don't know that I agree  
5 or disagree with it as far as what he -- what he's  
6 constituting as patching. I don't know what that  
7 means. Merely patching, I'm not sure what the  
8 context is, what that means.

9           Q    You didn't undertake any analysis into  
10 what kind of patching could be adopted to mitigate  
11 the vulnerabilities he identifies in his report,  
12 right?

13          A    No, I did not. And I would say that -- I  
14 would like -- it would be interesting for  
15 Dr. Halderman to say what patching he's referring  
16 to.

17               In addition to that, I go back to our  
18 previous discussion about this. When he says the  
19 patching, is that referencing reliably secure? Is  
20 that the same thing or not?

21          Q    All right. If you come down, do you see  
22 below that, it says, "[REDACTED]"? It's  
23 Section 1.2?

24          A    Yes, I do.

25          Q    And then he's got a number of paragraphs

1 set off by bullets.

2 Do you see that?

3 A Yes.

4 Q And in your declaration, you don't dispute  
5 any of the technical findings that he has listed  
6 there, right?

7 A The [REDACTED], I do not agree with  
8 that.

9 Q What paragraph are you at?

10 A The second bullet.

11 Q Where in your declaration do you dispute  
12 that?

13 A I don't -- I don't know if I spoke  
14 directly to this in my declaration or not, but I --  
15 you know, this particular notion that [REDACTED]  
16 [REDACTED], I -- I don't agree with that.

17 Q Do you see -- I'm sorry. I didn't mean to  
18 cut you off.

19 A You asked me, do I disagree with any of  
20 the points, and I'm telling you that I disagree, for  
21 example, with that point immediately. I can look at  
22 the others, but I can tell you, just looking at it,  
23 I saw DRE and I saw that comment, I can immediately  
24 tell you I do not agree with that.

25 Q My question was actually more precise

1 about whether you disagree in your declaration,  
2 because my focus is on the opinion you've put in  
3 this case. But I understand your testimony.

4 Looking at this particular piece or this  
5 particular point about the DREs, do you see where  
6 his writes in the second sentence of that paragraph,

7 "[REDACTED]

8 [REDACTED]

9 [REDACTED]

10 [REDACTED]

11 [REDACTED] "?

12 Do you see that?

13 A Yeah, I see that.

14 Q And he goes on, "[REDACTED]

15 [REDACTED]

16 [REDACTED]

17 [REDACTED]

18 [REDACTED]."

19 Do you see that?

20 A I see that.

21 Q And in your declaration responding to this  
22 report, you don't dispute his opinions in either of  
23 those sentences, right?

24 A I don't recall. Let me pull up my  
25 declaration. I can look.

1 But if I didn't dispute them, I'm telling  
2 you now I do dispute it. It may have not appeared  
3 in my declaration, but I do not agree that the BMD  
4 is at the same level in any comparison as the DRE.

5 Because just as he did a study on voters  
6 verifying their ballots, in a real election  
7 scenario, in the scenario where some people are  
8 actually worried about votes flipping, and they're  
9 all verifying their ballots, you're going to tell me  
10 that somehow you're going to change the outcome of  
11 an election with this -- with everyone verifying? I  
12 don't believe that. Whereas the DRE, you could  
13 easily do that because it's impossible to verify.  
14 Here, you can verify. DRE, you cannot. So I think  
15 that's disingenuous to compare the two at that  
16 level.

17 Q Where does Dr. Halderman say here that  
18 what he's looking at has anything to do with  
19 changing election outcomes?

20 A That's the whole intent of the hack.

21 Q Okay. That's your understanding of what  
22 he's saying here?

23 A My understanding of Dr. Halderman's  
24 overall objective is to change the outcome of the  
25 election undetected and where it can't be corrected.

1           Q    You don't have an understanding that  
2   Dr. Halderman is looking at whether individual  
3   voters can be disenfranchised by having their  
4   individual votes altered even if the election  
5   outcome is not altered? You don't understand that  
6   part of his analysis?

7           A    I've never heard him say that, and I don't  
8   see that as his analysis. That's not how I'm  
9   interpreting anything he's written. No.

10          Q    So you -- in responding to his report  
11   here, his July 1 report, your understanding was that  
12   what he was talking about was only about whether  
13   these hacks can result in changes to the election  
14   outcomes as opposed to simply changing individual  
15   votes that may not rise to the level of changing  
16   outcomes?

17          A    I think the -- the context that I read his  
18   work and his declaration is the ability to change  
19   the outcome of the election, changing both so that  
20   it's undetectable and can't be corrected.

21          Q    And in this paragraph we're looking at  
22   where he is comparing the ICX BMDs to the AccuVote  
23   TS and TS-X DREs, you understand that what he's  
24   comparing there are specific cybersecurity  
25   vulnerabilities within the computer equipment,



1 right?

2 A Well, in the next sentence where he talks  
3 about [REDACTED]  
4 [REDACTED], those are things he's referencing. From  
5 that perspective, that's what he's referencing. I  
6 see that.

7 Q There are these bulleted technical  
8 findings that we're looking at under his main  
9 conclusions. Are there any others that you dispute  
10 in your declaration?

11 A I don't recall directly disputing -- I  
12 don't know -- it goes to my declaration. I have  
13 to -- I need to pull out my declaration and go point  
14 by point down my declaration and see -- look at each  
15 one of these points and then go back and see if I  
16 reference that or talk about it in my declaration.

17 Do you want me to do that exercise?

18 Q Unfortunately I have to have you do that  
19 exercise because I need to know whether you're  
20 talking a position that your declaration refutes any  
21 of these points.

22 A Okay. So point 1, "[REDACTED]  
23 [REDACTED]" -- okay. Point 1 is  
24 not specific.

25 I already addressed point 2.

1 Point 3, "[REDACTED]  
2 [REDACTED]" -- all right. So Point 3, he's saying that  
3 [REDACTED]  
4 [REDACTED], which you were  
5 asking, do I understand the context. That's exactly  
6 what he just said here.

7 Let's see.

8 Q Let's just pause there so we're on the  
9 same page.

10 He says the [REDACTED]  
11 [REDACTED] [REDACTED]  
12 [REDACTED].

13 That's what he wrote there, right?

14 A Those are different things?

15 Q You don't understand that individual votes  
16 are distinct from election outcomes? You consider  
17 them the same?

18 A Election outcomes are based on individual  
19 votes, are they not?

20 Q But you understand that a voter can be  
21 disenfranchised when their vote does not count even  
22 if the election outcome is not altered by the  
23 failure to count their vote, right?

24 MR. MILLER: Objection. Calls for a legal  
25 conclusion.

1 THE WITNESS: Can you point to me in this  
2 declaration that we're looking at for Dr. Halderman  
3 where he says that? I may have missed it. I'm  
4 sorry.

5 BY MR. CROSS:

6 Q You mean where he writes, "[REDACTED]  
7 [REDACTED]  
8 [REDACTED]  
9 [REDACTED]"?

10 Are you asking for something other than  
11 what he wrote there?

12 A You're saying that the disenfran- -- how  
13 did you say -- disenfranchisement of an individual  
14 vote and not changing the outcome of an election?

15 Q Do you understand that a voter --

16 A Wait. Wait. Before you ask me that, I'm  
17 asking you, can you point to me in the document  
18 where he said that?

19 Q I'm not -- Dr. Gilbert, I'm not the  
20 witness, and I'm not representing you about language  
21 of disenfranchisement, okay?

22 You asked me to show you where he talks  
23 about evaluating the impact on individual votes and  
24 on election outcomes. We're reading a sentence  
25 here.

1           If you'd like to go through it and find  
2       others, we can do that. I'm trying to make sure I  
3       understand your view here.

4           Do you understand that a voter can cast a  
5       vote in an election, have that vote not count  
6       because it is altered in some way, it's lost, any  
7       variety of things could happen, and yet that does  
8       not alter the election outcome? Are we agreed that  
9       that is a scenario that can happen?

10          A     Yes, I agree that's a scenario that can  
11       happen.

12          Q     And in that scenario, that individual  
13       voter has been harmed by not having their vote  
14       counted.

15               MR. MILLER: Objection. Legal conclusion.  
16       BY MR. CROSS:

17          Q     I mean, do you dispute that, that every  
18       voter wants their vote to count?

19          A     No, I don't dispute that.

20          Q     Okay.

21          A     I guess the point that I'm making is, if  
22       individual votes change -- outcomes are determined  
23       by individual votes. So I was trying to understand  
24       where you were going, but I see your point.

25               You're talking about disenfranchisement of

1 individual voters, which I would also say I would  
2 agree with that. Just as I stated earlier, people  
3 with disabilities are individual voters, and they  
4 want the right to a private ballot and a fair ballot  
5 as well. Shouldn't their votes be counted and not  
6 be disenfranchised either?

7 So yes, I completely agree with that.  
8 Yes. You're right. Individual voters, every one,  
9 including those with disabilities.

10 Q I will say, Dr. Gilbert, that we have  
11 found something that we're in violent agreement on,  
12 particularly for voters with disabilities.

13 A Okay. So he's talking -- the third one is  
14 about QR codes. Let's see. In my -- let's see.  
15 Let me look for QR codes. Do I talk about QR codes  
16 in here?

17 In my declaration, paragraph 12, I talk  
18 about QR codes.

19 Q Just so we're clear, you don't dispute  
20 that -- strike that.

21 You don't dispute Dr. Halderman's finding  
22 that the [REDACTED]

23 [REDACTED] that's  
24 used in Georgia; you don't dispute that, right?

25 A I do not dispute that, given time and

1 access, that you can [REDACTED]

2 [REDACTED].

3 I do not dispute that.

4 Q And you haven't undertaken any analysis to  
5 determine how much time it would take for a hacker  
6 to do that if they wanted to do it, right?

7 A No, I have not done that. As I mentioned  
8 earlier, I don't hack systems. That's not my  
9 expertise, so I wouldn't have done that.

10 That's a great question to ask  
11 Dr. Halderman, how long does it take to do such an  
12 exercise.

13 MR. CROSS: You might want to write that  
14 down, Carey.

15 THE WITNESS: And with that, as far as the  
16 time it takes, again, that's not my area, but I  
17 think it would be interesting to find the answer to  
18 that.

19 And I'd be interested -- again, in the  
20 same spirit that I mentioned earlier about  
21 Dr. Halderman hacking a system and giving it to a  
22 third party, the same thing could be true where  
23 Dr. Halderman is given a system and then put on the  
24 clock to determine how long it takes him to hack it,  
25 not one that he's seen for 12 months.

1 BY MR. CROSS:

2 Q Are you aware that there are individuals  
3 that are claiming to have released proprietary  
4 election management software from Dominion like that  
5 used in Georgia?

6 A I am not aware of that, but I am not  
7 surprised that -- whether it's true or not, the  
8 allegation would be out there is not a surprise to  
9 me.

10 Q Why not?

11 A It's the climate we live in. Just  
12 misinformation, disinformation. Just, I'm not  
13 surprised.

14 Q Would you be concerned if that allegation  
15 is true that proprietary election software from  
16 Dominion was leaked, for example, by a clerk who had  
17 access to it in one of the election challenge  
18 proceedings in a state like Arizona?

19 MR. MILLER: Object to form.

20 THE WITNESS: I wouldn't be severely  
21 concerned.

22 Again, I think the verification piece is  
23 more important to me. So I would -- you know, and  
24 I'm willing -- I'd be willing to consider this.  
25 That was another piece.

1           If people are verifying their ballots and  
2       it's wrong, they correct them, and that would tell  
3       you things, so you would get it right.

4           So even if you did hack it, if people were  
5       verifying it, you'd get it right.

6       BY MR. CROSS:

7           Q    Isn't one of the challenges with voter  
8       verification is that even if you're right that  
9       voters can reliably identify when their votes are  
10      being altered from what they cast, that only occurs  
11      once the election is underway, right?

12          A    Right.

13          Q    So shouldn't you, as an election security  
14      expert -- don't you agree that rather than the  
15      mechanism for securing an election being one that  
16      has to play out when the election is already  
17      underway, there should be measures that are taken  
18      before the election even begins to make the election  
19      as secure as it can reasonably be?

20          A    I think that's a good approach, and I hope  
21      that Dr. Halderman and others will -- I hope you  
22      will communicate to them to relay publicly what is  
23      reasonable security so that we can implement those,  
24      and those standards can be used if they are willing  
25      to accept what they are.



1           So yes. What you just said is a reference  
2           to reasonable security implementation for these  
3           systems which none of them, to my knowledge, have  
4           ever said. But if they can do that recommendation,  
5           I appreciate it. And again, I said I'm working on  
6           things in this area, which I look forward to  
7           engaging them on in '22.

8           Q    You've testified in your declaration and  
9           here today that voter verification is one of the  
10          primary ways to protect against the particular hacks  
11          that Dr. Halderman identifies in his July 1 report,  
12          right?

13          A    Right.

14          Q    As an election security expert, don't you  
15          think that the better approach would be to actually  
16          remedy the hack, to take measures that prevent the  
17          hacking in the first place, rather than leaving it  
18          to voters to discover it on their ballots in the  
19          middle of an election?

20          A    That's -- to me, that's an ideal scenario.  
21          But I would say that my colleagues, Dr. Halderman  
22          and Dr. Appel, et cetera, would say there is no way  
23          to secure a machine, given time and access,  
24          100 percent. The verification is the one thing we  
25          can secure independent of the hacks that they

1       implement.

2               So again, I'm going back to the reference  
3       of reasonably secure. I suspect that doesn't exist  
4       because I don't think they can live with themselves  
5       saying that there's a way -- a computer system that  
6       would be acceptable in voting because their job is  
7       to break things.

8               But if they were to announce that and say  
9       that, that would be a remarkable thing we could all  
10      agree upon and move forward in a positive direction  
11      upon if there is such a reasonable secure standard.

12              Q     You keep talking about Dr. Halderman and  
13      Dr. Appel, but -- and I understand that you perceive  
14      a disagreement among you.

15              I'm really focusing right now on your  
16      position. Your position, as I understand it, is  
17      that BMDs can be reliably used.

18              And my question to you is, rather than  
19      relying on voter verification to catch a hack or a  
20      glitch in the system once an election is already  
21      underway, don't you agree as an election security  
22      expert that those who are responsible for these  
23      machines and for elections should take reasonable  
24      measures to prevent the hacking in the first place,  
25      for example, taking measures to mitigate what

1 Dr. Halderman has found with these machines?

2 MR. MILLER: Objection. Vague, asked and  
3 answered.

4 THE WITNESS: Well, I would say I agree  
5 with reasonable measures. You and I agree on that,  
6 and I hope Dr. Halderman and them -- I'm so excited  
7 to hear this, and I am eager to see what comes out  
8 of this.

9 But yeah, reasonable measures. See, to  
10 me, the question is, what is reasonable? And I want  
11 to hear what reasonable is.

12 You're using the term, and I'm -- I'm  
13 using the term, and hopefully we are on the same  
14 page what that actually was going to look like.

15 But yeah, I think that's true. Reasonable  
16 security, that makes sense to me.

17 BY MR. CROSS:

18 Q As an election security expert, why would  
19 it be sensible to use an election system that  
20 possesses all of the vulnerabilities that  
21 Dr. Halderman has identified in Georgia and leave it  
22 to voters to identify a hack by carefully reviewing  
23 their ballots, including ballots like the one you  
24 just looked at, from an actual election in Georgia,  
25 rather than taking necessary measures on the front

1 end to mitigate those vulnerabilities?

2 A I think you could take necessary measures  
3 to make it reasonable, as you said. But again, even  
4 in a hand-marked paper ballot scenario, I gave you  
5 an example where voters don't verify those and you  
6 have issues.

7 So the burden is on the voter either way  
8 to actually verify the ballot. Even hand-marked  
9 paper ballots have to be verified.

10 Q Right. But what we've established is, I  
11 thought, that the burden on the voter is much higher  
12 with BMDs because the BMD allows a hack that can  
13 change votes on a large scale the voters may not  
14 even be able to detect on their ballot such as a  
15 change in the QR code, right?

16 A A change in the QR code cannot be detected  
17 by the voter. I think we all agree on that.

18 Q And the type -- sorry.

19 A What I'm saying is, in the case of the  
20 hand-marked paper ballots, I gave you examples where  
21 large-scale votes were changed. Large-scale votes.  
22 Large. So you can't minimize the impact either way  
23 of voter verification. There's -- the burden is  
24 there in both scenarios.

25 Q Just be precise. You've not given a

1 situation where large-scale votes were changed in a  
2 hand-marked paper ballot. You're testifying about  
3 the situation in Florida where the vote they cast  
4 was not the vote they intended. But their vote  
5 wasn't changed from the way it was cast on the  
6 ballot, right?

7 A It wasn't changed the way they cast, but  
8 they cast it -- the design caused them to cast it  
9 the wrong way. I don't see a distinction either  
10 way.

11 Q I didn't want to cut you off when you were  
12 looking at the main conclusions.

13 Are there any other -- any findings here  
14 that you dispute?

15 A Okay. I talk about QR codes. I talk  
16 about using BMDs for only with people with  
17 disabilities.

18 Q Which bullet are you on?

19 A The second-to-the-last bullet, using  
20 vulnerable -- and it talks about all in-person  
21 voters.

22 Okay. So I know I talk about those things  
23 in my declaration.

24 Q All right. Go to page 19 of 97, if you  
25 would. And the heading is "4.2 [REDACTED]."

1 A Got it.

2 Q Do you see in the third paragraph down  
3 that begins "[REDACTED]"?

4 A Yes.

5 Q And here Dr. Halderman writes, "[REDACTED]  
6 [REDACTED]  
7 [REDACTED],  
8 [REDACTED]  
9 [REDACTED]."

10 Do you see that?

11 A Yes.

12 Q And you don't dispute in your declaration  
13 that the printer that's used with the BMD system in  
14 Georgia is, in fact, an off-the-shelf printer like  
15 the one that Dr. Halderman used, right?

16 A No, I do not dispute that. I don't have  
17 access to the actual printer being used, but I  
18 didn't dispute that at all.

19 Q And then if you come down, do you see the  
20 paragraph that begins, "[REDACTED]" on the same  
21 page, a couple below where we were?

22 A Let's see.

23 Q Two paragraphs --

24 A I got it. I see it.

25 Q Here Dr. Halderman wrote, "[REDACTED]"

1 [REDACTED]  
2 [REDACTED]  
3 [REDACTED]  
4 [REDACTED]  
5 [REDACTED]

6 Do you see that?

7 A Yes.

8 Q He goes on to talk about the election  
9 packages that he received.

10 Do you see that?

11 A Yes.

12 Q You don't address that data in your  
13 declaration, right?

14 A No, I do not.

15 Q Do I understand, is that not something  
16 you've analyzed?

17 A No, I have not analyzed that.

18 Q If you come to the next paragraph, do you  
19 see where it reads, "[REDACTED]"?

20 A Yes.

21 Q He writes, "[REDACTED]"

22 [REDACTED]

23 [REDACTED]

24 [REDACTED]."

25 He goes on to say, "[REDACTED]"

1

2

3

4

."

5

Do you see that?

6

A Yes.

7

8

Q And you don't dispute his opinion there on what that indicates in your declaration, right?

9

A I do not discuss that in my declaration.

10

11

12

Q You previously testified in this case that your understanding is that the BMD election system is air-gapped, right?

13

A Yes.

14

15

16

17

Q I think you testified before that you're assuming that to be true based on some materials you looked at describing how the system is supposed to operate and be set up; is that right?

18

A Correct.

19

20

21

Q You've not yourself confirmed that any aspect of Georgia's election system is, in fact, air-gapped, right?

22

23

A I have not had a Georgia system in my possession to do any evaluation.

24

25

Q And you did not undertake any analysis or investigation with your client in this case to



1 determine whether the election system is in any way  
2 air-gapped, right?

3 A No. I use -- I cited in my previous  
4 declarations what I used. Those documents were  
5 referenced in my declaration.

6 Q You did not undertake any analysis or  
7 investigation to determine whether any equipment or  
8 devices that were used with the old DRE system have  
9 also been used with the new BMD system, right?

10 A All I had was what I put in my  
11 declaration, the documents that I referenced. I  
12 didn't have access to an old DRE, I did not have  
13 access to the new BMD or any election system. I  
14 have not had access to any election system from the  
15 State of Georgia ever.

16 MR. CROSS: Oh, why did it do that? Hold  
17 on. Sorry. I was just pulling up a new exhibit.  
18 It's going to be Exhibit 6. Give me one second.

19 (Exhibit 6 was marked for identification  
20 and is attached hereto.)

21 BY MR. CROSS:

22 Q All right. Pull up Exhibit 6, if you  
23 would, please, Dr. Gilbert. Just let me know when  
24 you have it.

25 Hold on. Sorry. It's Exhibit -- it's

1 Exhibit 5.

2 A Exhibit 5, you said?

3 Q Yes.

4 A I think there's -- we already had 5,  
5 right?

6 Q I'm not sure what just happened here.  
7 Sorry. I just introduced a new exhibit, but --

8 MR. MILLER: Yeah, I noticed the same  
9 thing. I think it -- somehow they got switched.  
10 I'm not exactly sure how.

11 MR. CROSS: All right. Hold on. Hold on.

12 MR. MILLER: Do you want to go off the  
13 record?

14 MR. CROSS: Yeah, yeah. Let's go off the  
15 record.

16 THE VIDEO OPERATOR: Okay. Going off the  
17 record at 3:30.

18 (Recess, 3:30 p.m. - 3:32 p.m.)

19 THE VIDEO OPERATOR: Back on the record at  
20 3:32.

21 BY MR. CROSS:

22 Q Dr. Gilbert, do you have Exhibit 6 open in  
23 front of you?

24 A I do. The Tab 6 Dominion thing?

25 Q Yes.

1 A Okay.

2 Q Is this a document that you've seen  
3 before?

4 A I don't recognize this off the top of my  
5 head.

6 Q Do you see at the top there's an e-mail  
7 from Michael Barnes to Scott Tucker?

8 A Yes, I do.

9 Q Do you know who Michael Barnes is?

10 A No, I do not.

11 Q Do you understand he's one of the election  
12 officials that works for the Secretary of State's  
13 office?

14 A If you say so. Like I say, I don't know  
15 who that is.

16 Q You see the e-mail thread begins with an  
17 e-mail between two individuals at Dominion Voting,  
18 Dedrick Smith and Scott Tucker?

19 A Okay.

20 Q And those are -- that e-mail is sent on  
21 January 15, 2020, right?

22 A Yes.

23 Q And Mr. Smith writes to Mr. Tucker, "I was  
24 wondering if you could ask the state if there is a  
25 special USB they are supposed to be sending out to

1 the counties to submit their L&A exports and the  
2 exports for election day."

3 Do you see that?

4 A I see something, but it doesn't say  
5 "special USB." It says, "Is the state providing new  
6 USB drives?"

7 That's what I have here in front of me.

8 Q No, no. Come down to the first e-mail in  
9 the thread from Mr. Smith to Mr. Tucker, bottom of  
10 the page.

11 A Okay. Bottom of the page. I'm there. I  
12 see it now. "Special USB," I see it.

13 Q You understand L&A here refers to logic  
14 and accuracy testing, right?

15 A Correct. Yes.

16 Q And then Mr. Smith goes on, "They have a  
17 USB that they normally send the export files on, but  
18 they are old. So we need to know if they can use  
19 those or if the state will be sending new USBs out."

20 Do you see that?

21 A Yes.

22 Q Mr. Tucker forwards this e-mail on to  
23 Michael Barnes. You can see his e-mail indicates  
24 that he is with the Secretary of State's office in  
25 Georgia.

1 Do you see that?

2 A Yes, I see that.

3 Q Mr. Tucker writes, "Michael, is the state  
4 providing new USB drives for the counties to send  
5 their L&A exports and E-Day exports to you on or  
6 should they use the USB drive they have from the  
7 previous system?"

8 Do you see that?

9 A Yes.

10 Q Do you understand that January of 2020 is  
11 in the time frame of when Georgia was rolling out  
12 the new BMD system, switching from the DREs to the  
13 Dominion system?

14 A Okay.

15 Q Do you recall one way or the other whether  
16 that's right?

17 A I don't recall when they -- when they did  
18 that, but --

19 Q Okay.

20 A -- okay.

21 Q And then Mr. Barnes responds same day  
22 saying, "The counties can use the USB that the state  
23 has previously provided."

24 Do you see that?

25 A Yes, I do.

1           Q    Are you aware that this is an exhibit that  
2           we introduced during the hearing in September of  
3           last year in which you also testified?

4           A    Like I said, I don't remember this, but  
5           okay.

6           Q    There's no indication in your declaration  
7           that you've had any -- conducted any investigation  
8           into what's being discussed here and whether USB  
9           drives that were used with the DRE system have also  
10          been used with the new BMD system. That's not  
11          something you've looked into, correct?

12               MR. MILLER:  Objection.  Relevance.

13               THE WITNESS:  No, I have not.

14          BY MR. CROSS:

15           Q    And you previously testified in this case  
16           that the new BMD system is completely separate and  
17           unconnected to the old DRE system, right?

18           A    Yes, I did.

19           Q    But if the counties were using USB drives  
20           with the new Dominion system that they previously  
21           had used with the DRE system, that certainly would  
22           raise the possibility for an exchange of data  
23           between those two systems, right?

24               MR. MILLER:  Objection.  Relevance.

25               THE WITNESS:  I think you said it

1 correctly. Possibility.

2 So it's possible that these drives could  
3 have been completely wiped and reformatted. It's  
4 possible that they could have been tainted. So it's  
5 possible a lot of different things based on what you  
6 are saying.

7 BY MR. CROSS:

8 Q You didn't think that it was relevant for  
9 your opinions in this case to determine whether the  
10 counties or the state are using USB drives with the  
11 new system that were previously used with the DRE  
12 system without wiping them, without securing them,  
13 without ensuring that they're not compromised?

14 A I did not ask that question.

15 Q Do you think that that's a relevant  
16 question for evaluating the security of the new  
17 election system?

18 A I think that is a relevant question, and  
19 it should be asked.

20 I think the protocol of what's obviously  
21 exchanged -- anything connected to the voting system  
22 should be evaluated, obviously.

23 Q Evaluated how?

24 A All kinds of ways. It depends on what  
25 you're connecting to it.

1 Q I'm sorry. Can you explain what you mean?

2 A For example, if you're connecting a USB to  
3 the system, it should be wiped. That's a clean -- a  
4 way to clean the -- keep the system clean, avoid  
5 issues. Standard protocol in many places in shops  
6 that have technology.

7 So evaluating what is connected, what's  
8 the data on there, those questions are things that  
9 have to be looked at.

10 Q Why didn't you look at that on behalf of  
11 the state with respect to things like the USB drives  
12 that we see being discussed here for your work?

13 A I was -- I was focused on what was  
14 given -- I was not given USB drives. I was not  
15 given any technology.

16 My focus, again, was on Dr. Halderman and  
17 Appel's analysis. That's where my focus was on. I  
18 don't have any equipment, never have received any  
19 equipment, technology, from the State of Georgia.

20 Q If you come back to Dr. Halderman's  
21 report, the July 1 report, the page we were on  
22 before, page 19 of 97 --

23 A Okay.

24 Q -- at the bottom, do you see where it  
25 says, Section 4.3, "[REDACTED]"?



1 A Yes, I do.

2 Q You don't offer an opinion in this case  
3 that Dr. Halderman's methodology for his analysis in  
4 his report was in any way improper or unsound,  
5 right?

6 A I do not.

7 Q Come to page 22 of 97. You'll see there's  
8 a heading in the middle of the page, Section 5.2,  
9 "[REDACTED]."

10 A Yes.

11 Q And here he writes, "[REDACTED] [REDACTED]  
12 [REDACTED]  
13 [REDACTED]  
14 [REDACTED]

15 Do you see that?

16 A Yes.

17 Q You don't dispute in your declaration that  
18 ICX QR codes are not protected against replay  
19 attacks, right?

20 A I do not.

21 Q If you come down to page 24 of 97, do you  
22 see where it says, "[REDACTED]"?

23 A Yes.

24 Q And here he wrote, "[REDACTED]  
25 [REDACTED]

1 [REDACTED] [REDACTED]

2 [REDACTED]

3 [REDACTED], " and he refers to Section 11.1. He

4 says, "[REDACTED]

5 [REDACTED]."

6 Do you see that?

7 A I do see that.

8 Q And you don't dispute in your declaration  
9 his finding on the ability to copy the ballots,  
10 right?

11 A I do not.

12 Q Next, he refers again to the [REDACTED]

13 [REDACTED]

14 Do you see that?

15 A Yes.

16 Q Come to page 29 of 97.

17 A Okay.

18 Q Do you see there's a picture at the top  
19 of -- it looks like access cards?

20 A Yep.

21 Q Do you see where it says, "[REDACTED]

22 [REDACTED]"?

23 A Yes.

24 Q And then he writes, "[REDACTED]

25 [REDACTED]

1 [REDACTED] . "

2 Do you see that?

3 A Yes, I do.

4 Q He goes on to say at the end, "[REDACTED]

5 [REDACTED]

6 [REDACTED] . "

7 Do you see that?

8 A I do.

9 Q You don't dispute that finding in your  
10 declaration, right?

11 A I do not.

12 Q If you come down to the heading 6.1 on the  
13 same page --

14 A Yep.

15 Q -- it reads, "[REDACTED]  
16 [REDACTED] . "

17 Do you see that?

18 A I do.

19 Q Here he writes, "[REDACTED]

20 [REDACTED]

21 [REDACTED]

22 [REDACTED] . "

23 Do you see that?

24 A I do.

25 Q And you don't dispute that finding in your

1 declaration, right?

2 A I do not.

3 Q All right. Come to the next page, heading  
4 6.2.

5 A Yes.

6 Q It says, "[REDACTED]  
7 [REDACTED]."

8 Do you see that?

9 A I do.

10 Q And here he writes, "[REDACTED]  
11 [REDACTED]  
12 [REDACTED] [REDACTED]  
13 [REDACTED]  
14 [REDACTED]."

15 Do you see that?

16 A I do.

17 Q And you don't dispute that finding in your  
18 declaration, right?

19 A No, I do not.

20 Q Come down to the next page, please,  
21 heading 6.3.

22 A Got it.

23 Q Here it reads, "[REDACTED]  
24 [REDACTED]

25 Do you see that?

1 A Yes.

2 Q He writes, "[REDACTED]

3 [REDACTED]

4 [REDACTED]

5 [REDACTED]

6 Do you see that?

7 A I do.

8 Q You don't dispute that finding in your  
9 declaration, correct?

10 A I do not.

11 Q Come to the next page, 33 of 97,  
12 heading 7.

13 A Page 33, you said?

14 Q Yes, sir. Heading 7.

15 A I'm there.

16 Q Okay. Come down to heading 7.1.

17 Do you see that?

18 A Yeah, I'm there.

19 Q He writes, "[REDACTED]

20 [REDACTED]

21 [REDACTED]."

22 Do you see that?

23 A Yes.

24 Q You don't dispute that finding in your  
25 declaration, correct?

1 A I do not.

2 Q Come to the next page, please,  
3 heading 7.2.

4 A Yes.

5 Q Here he writes -- the heading is

6 "[REDACTED]." And he writes, [REDACTED]  
7 [REDACTED],  
8 [REDACTED]."

9 Do you see that?

10 A Yes.

11 Q You don't dispute that finding in your  
12 declaration, correct?

13 A I do not.

14 Q Go on page 36 of 97, please.

15 A Okay.

16 Q He has heading 7.5, "[REDACTED]  
17 [REDACTED]

18 Do you see that?

19 A I do.

20 Q He writes, "[REDACTED]  
21 [REDACTED]  
22 [REDACTED]  
23 [REDACTED]."

24 Do you see that?

25 A I do.

1           Q    You don't dispute that finding in your  
2    declaration, correct?

3           A    I don't think I dispute this. No, I do  
4    not.

5           Q    And then he goes on to refer to defeating  
6    logic and accuracy testing.

7                   Do you see that?

8           A    I do.

9           Q    And he -- at the end of that paragraph, he  
10   concludes, "[REDACTED]

11   [REDACTED]

12                   Do you see that?

13          A    At the end of that paragraph? I don't see  
14   it.

15          Q    Do you see the short paragraph that has  
16   the bolded language, "[REDACTED]

17   [REDACTED]

18          A    Yeah, I do.

19          Q    If you come to the end of that short  
20   paragraph, the last sentence reads, "[REDACTED]

21   [REDACTED]."

22          A    I don't see that anywhere. I see  
23   "[REDACTED]" --

24          Q    You're too far down. I'm sorry. Come up  
25   above -- just below the heading 7.5, the bolded

1 language, "[REDACTED]." "

2 A Okay. I'm there.

3 Q So stay in that same short paragraph.

4 A I see it. I see it. "[REDACTED]  
5 [REDACTED]." I see it now. The last  
6 sentence in that paragraph. Okay.

7 Q Yes. And you don't dispute that finding  
8 in your declaration, right?

9 A I did not dispute that in my declaration.

10 Q Okay. If you come down to where you were  
11 looking at a moment ago, the bolded language at the  
12 bottom of that page that reads, "[REDACTED]  
13 [REDACTED]," do you see that?

14 A Yes.

15 Q At the end of that paragraph, still on the  
16 same page, he concludes, [REDACTED]  
17 [REDACTED]." "

18 Do you see that?

19 A Yes.

20 Q You did not dispute that finding in your  
21 declaration, correct?

22 A No, I did not.

23 Q Okay. Come to the next page, please.

24 A Okay.

25 Q Do you see at the bottom of the next page



1       there's a bold heading, "[REDACTED]"

2       [REDACTED]

3             A     Yes.

4             Q     If you come down just three or four lines,  
5       the sentence that begins "However"?

6             A     Yes.

7             Q     He writes, "[REDACTED]"

8       [REDACTED]

9       [REDACTED]

10      [REDACTED]"

11             Do you see that?

12             A     Yes.

13             Q     You don't dispute that finding in your  
14       declaration, right?

15             A     I did not.

16             Q     If you come to the next page --

17             A     Yes.

18             Q     -- at the top he writes, "[REDACTED]"

19      [REDACTED]."

20             Do you see that?

21             A     Yes.

22             Q     Come to the beginning of the very next  
23       paragraph. Do you see where it begins, "[REDACTED]"

24      [REDACTED]"?

25             A     Yes.

1 Q And he writes, "[REDACTED]  
2 [REDACTED]  
3 [REDACTED]."

4 Do you see that?

5 A I do.

6 Q You don't dispute that finding in your  
7 declaration, right?

8 A I do not.

9 Q Come to the next bold heading on the same  
10 page that reads, "[REDACTED]  
11 [REDACTED]

12 Do you see that?

13 A Yes.

14 Q He writes, "[REDACTED]  
15 [REDACTED], " right?

16 A Right.

17 Q And we're agreed on that, right?

18 A Yes. To my knowledge, I don't know how  
19 they would verify it. The only way I've seen  
20 that -- and I don't -- I haven't seen this. But I  
21 know other systems -- and when we designed -- we  
22 designed this many years ago -- take the ballot and  
23 stick it in another machine to get a summary  
24 display, or have the tally, the scanner, give you  
25 a -- I guess a ballot summary, and you can compare

1 it to the ballot summary that's on there.

2 But I -- other than that, people cannot  
3 read the QR code itself.

4 Q One of the things you suggested in an  
5 earlier declaration in this case is that the state  
6 should do parallel testing of a single BMD during an  
7 election.

8 Do you recall suggesting that?

9 A Yes.

10 Q Do you think that testing a single BMD out  
11 of over 30,000 that are used across the state  
12 provides a meaningful test of the security and  
13 reliability of those BMDs as a whole?

14 A That's not what I recommended. But to  
15 answer your question, no, that would not. You have  
16 all those, and you're just testing one? No, that  
17 wouldn't make a difference. But if you test one in  
18 every precinct, that's different.

19 Q Okay. So it's your recommendation to test  
20 one in every precinct during the election in  
21 parallel testing?

22 A That is something I have recommended. It  
23 has pros and cons. But that's way better than just  
24 picking one particular BMD in the State of Georgia  
25 and parallel testing it. Yeah, that wouldn't make

1 much sense.

2 Q Okay. Come to page 40 of 97 in  
3 Dr. Halderman's report, section heading 8.1.

4 A Got it.

5 Q You see it reads, [REDACTED]

6 [REDACTED] "?

7 A Yes.

8 Q And he writes, [REDACTED]

9 [REDACTED]

10 [REDACTED]

11 [REDACTED] ."

12 Do you see that?

13 A I do.

14 Q You don't dispute that finding in your  
15 declaration, correct?

16 A I do not.

17 Q Come down to the next page under the  
18 pictures.

19 A Okay.

20 Q Do you see where it says, "Figure 9"?

21 A Yes.

22 Q And here it reads, "[REDACTED]

23 [REDACTED] ."

24 Do you see that?

25 A I do.

1 Q Dr. Halderman writes, "[REDACTED]  
2 [REDACTED].  
3 [REDACTED]  
4 [REDACTED]  
5 [REDACTED]  
6 [REDACTED]  
7 [REDACTED]."

8 Do you see that?

9 A I do.

10 Q And you don't dispute that finding in your  
11 declaration, correct?

12 A I do not.

13 Q Come to the top of the next page, please.

14 A Okay.

15 Q You see there's a picture, and below that  
16 it says, "Figure 10"?

17 A Yes.

18 Q And then it reads, "[REDACTED]  
19 [REDACTED]."

20 Do you see that?

21 A I do.

22 Q And here Dr. Halderman writes, "[REDACTED]  
23 [REDACTED]  
24 [REDACTED]  
25 [REDACTED]

1

[REDACTED]

2

[REDACTED]

3

[REDACTED]

4

[REDACTED] "

5

Do you see that?

6

A I do.

7

Q And you do not dispute that finding in

8

your declaration, correct?

9

A I do not.

10

Q Go to section heading 8.2.

11

A Okay.

12

Q It reads [REDACTED]

13

Are you with me?

14

A Yes, I am.

15

Q And then Dr. Halderman writes, "[REDACTED]

16

[REDACTED]

17

[REDACTED]

18

[REDACTED]

19

[REDACTED] ."

20

Do you see that?

21

A I do.

22

Q And you don't dispute that finding in your

23

declaration, right?

24

A I do not.

25

Q If you stay in that same section, do you

1 see the very next paragraph begins, "[REDACTED]"

2 [REDACTED]?"

3 A Yes, I see it.

4 Q Dr. Halderman writes, "[REDACTED]"

5 [REDACTED]

6 [REDACTED]

7 [REDACTED]

8 [REDACTED]."

9 Do you see that?

10 A Yes.

11 Q In the next paragraph he writes, "[REDACTED]"

12 [REDACTED]

13 [REDACTED]

14 [REDACTED] [REDACTED]

15 [REDACTED]

16 [REDACTED]."

17 Do you see that?

18 A I see that.

19 Q You don't dispute that finding in your  
20 declaration, correct?

21 A I do not.

22 Q If you stay on that same page, the  
23 paragraph we just read, do you still have that in  
24 front of you?

25 A I do.

1           Q    If you come above, do you see where  
2   Dr. Halderman indicates that he previously drew an  
3   analogy to the Boeing 737 MAX aircraft, where a  
4   small, last-minute change to correct a single  
5   problem inadvertently created a much more dangerous  
6   failure mode that reportedly led to two fatal  
7   crashes?

8                   Do you see that?

9           A    I do.

10          Q    Are you familiar with that situation with  
11   Boeing?

12          A    I am not.

13          Q    Come to page 44 of 97, if you would.

14          A    Real quick, the Boeing example that you  
15   gave, just to make a note, I'm not familiar with  
16   that, but that's an example of what cybersecurity  
17   people would be very well aware of.

18          Q    Got it. Understood.

19          A    Where do you want me to go?

20          Q    Sorry. Page 44 of 97.

21          A    Okay. I'm there.

22          Q    Do you see the heading 8.3?

23          A    Yes. Got it.

24          Q    And it reads, "[REDACTED]  
25   [REDACTED]."



1 Do you see that?

2 A I do.

3 Q And then Dr. Halderman writes, "[REDACTED]

4 [REDACTED]

5 [REDACTED]

6 [REDACTED]."

7 Do you see that?

8 A Yes.

9 Q You don't dispute that finding in your  
10 declaration, correct?

11 A I do not.

12 Q All right. Come to the next page, please,  
13 under heading 8.5.

14 A Okay.

15 Q And here it reads, "[REDACTED]

16 [REDACTED] right?

17 A Yes.

18 Q And Dr. Halderman writes, "[REDACTED]

19 [REDACTED]" -- I'm sorry. Let  
20 me try that again.

21 Here Dr. Halderman writes, "[REDACTED]

22 [REDACTED]

23 [REDACTED]

24 [REDACTED]

25 [REDACTED] [REDACTED]

1

[REDACTED]

2

[REDACTED]."

3

Do you see that?

4

A Yes.

5

Q And you don't dispute that finding in your  
6 declaration, correct?

7

A I do not.

8

Q Come to page 47 of 97, please.

9

A Okay.

10

Q Actually, go up one page -- sorry -- to  
11 page 45 of 97 just so you see the heading 8.6 at the  
12 bottom.

13

A Got it.

14

Q It reads, "[REDACTED]

15

[REDACTED]."

16

Do you see that?

17

A I do.

18

Q If you come to the top of the next page,  
19 do you see at the very top of that page  
20 Dr. Halderman writes, "[REDACTED]

21

[REDACTED]

22

[REDACTED]

23

[REDACTED]

24

[REDACTED]

25

[REDACTED]

1 Do you see that?

2 A I do.

3 Q You don't dispute that finding in your  
4 declaration, correct?

5 A I do not.

6 Q All right. Come down to the next section,  
7 please, 8.7.

8 A Okay.

9 Q Here it reads, "[REDACTED]  
10 [REDACTED]."

11 Are you with me?

12 A Yes.

13 Q Here Dr. Halderman writes, "[REDACTED]  
14 [REDACTED]  
15 [REDACTED]."

16 Do you see that?

17 A Yes.

18 Q You don't dispute that finding in your  
19 declaration, correct?

20 A I do not.

21 Q Come to page 50 of 97, please.

22 A Okay.

23 Q Do you see at the top there's what looks  
24 to be some computer code and then it says, "[REDACTED]  
25 underneath?

1 A Yep.

2 Q And here Dr. Halderman writes, "[REDACTED]

3 [REDACTED],

4 [REDACTED]

5 [REDACTED]

6 [REDACTED]."

7 Do you see that?

8 A I do.

9 Q You do not dispute that finding in your  
10 declaration, correct?

11 A I do not.

12 Q Then if you come down one paragraph, do  
13 you see the heading that reads "[REDACTED]  
14 [REDACTED]"?

15 A I do.

16 Q If you come down to the second paragraph  
17 under that heading, do you see where it reads --  
18 it's just two sentences -- two lines -- it reads,  
19 "[REDACTED]"?

20 A I do.

21 Q In there Dr. Halderman writes, "[REDACTED]  
22 [REDACTED]  
23 [REDACTED]  
24 [REDACTED] and he identifies two examples, one at the  
25 county level, one at Dominion.

1 Do you see that?

2 A I do.

3 Q You don't dispute that finding in your  
4 declaration, correct?

5 A I do not.

6 Q Come to the next -- top of the next page,  
7 please.

8 A Okay.

9 Q Do you see section 9.2, "[REDACTED]  
10 [REDACTED]"?

11 A I do.

12 Q Here Dr. Halderman writes, "[REDACTED]  
13 [REDACTED]  
14 [REDACTED]  
15 [REDACTED]  
16 [REDACTED]

17 Do you see that?

18 A I do.

19 Q You don't dispute that finding in your  
20 declaration, correct?

21 A I do not.

22 Q Come down to the next section, please,  
23 9.3.

24 A Okay.

25 Q It reads, "[REDACTED]

1

[REDACTED]

2

Do you see that?

3

A I do.

4

Q Here Dr. Halderman writes, "[REDACTED]

5

[REDACTED]

6

[REDACTED] [REDACTED]

7

[REDACTED]

8

[REDACTED]

9

[REDACTED]."

10

Do you see that?

11

A I do.

12

Q You do not dispute that finding in your

13

declaration, correct?

14

A I do not.

15

Q Come to page 54 of 97, please.

16

A I'm there.

17

Q Do you see the heading 9.6, "[REDACTED]

18

A I do.

19

Q Do you see the second paragraph that

20

begins, "[REDACTED]"?

21

A Yes.

22

Q Here Dr. Halderman writes, [REDACTED]

23

[REDACTED]

24

[REDACTED],

25

[REDACTED]

1 [REDACTED]. "

2 Do you see that?

3 A I see it.

4 Q You don't disagree with that statement in  
5 your declaration, correct?

6 A I do not.

7 Q You see he goes on to explain --

8 Dr. Halderman does -- "[REDACTED]

9 [REDACTED]

10 [REDACTED]

11 [REDACTED]. "

12 Do you see that?

13 A Yes.

14 Q Do you recall that vulnerability that was  
15 discovered?

16 A I do not.

17 Q Dr. Halderman explains, "[REDACTED],

18 [REDACTED]

19 [REDACTED]

20 [REDACTED]

21 Dr. Halderman concludes, "[REDACTED]

22 [REDACTED]. "

23 Do you see that?

24 A I see it.

25 Q And you don't dispute that finding in your

1 declaration that [REDACTED]

2 [REDACTED], right?

3 A I do not dispute it in my declaration, but  
4 I do not agree with it.

5 Q And what's the basis for disagreeing with  
6 that when you've not examined the security -- the  
7 cybersecurity of the equipment at issue here?

8 A I don't need to examine it to make this  
9 statement.

10 The DRE does not have a paper trail. If  
11 there's a vulnerability on the BMD and voters verify  
12 it, you can catch it. In other words, you can  
13 prevent it. He can hack it and change it all he  
14 wants. But if they are verifying it, he can't  
15 change the outcome of the election. He can't  
16 disenfranchise people. The DRE, you can change it  
17 and it's impossible to know.

18 So Dr. Shamos is right in the context of  
19 the DRE, but that doesn't apply to a BMD the same  
20 way. It is not the same.

21 Q Voter verification does not prevent any of  
22 the hacks that Dr. Halderman has identified from  
23 occurring, right?

24 A Voter verification would not prevent the  
25 hack from occurring. It would prevent the hack from



1       being successful.

2               Q     When you say, "Voter verification will  
3     prevent the hack from being successful," you mean if  
4     a voter has the time and the ability to reliably  
5     verify every selection on their ballot before it's  
6     tabulated, correct?

7               A     Yes.

8               Q     Come to page 55 of 97, please.

9               A     Okay.

10              Q     Actually, we should be more precise.

11                    When you say -- when you say, "Voter  
12     verification will prevent the hack from changing a  
13     vote or an election outcome," that's only if the  
14     voter has the time and the ability to verify each of  
15     the selections on their bullet, and they actually do  
16     that for each selection, right?

17              A     If they actually do it for each selection,  
18     yes. It has to be a verification for those  
19     selections. Yes.

20              Q     All right. I'm sorry. Take a look at  
21     page 55 of 97.

22              A     Page 55, I'm there.

23              Q     Sorry. I'm just thinking about the  
24     question I just asked you.

25                    There's also an additional step that's

1 needed to protect the voter, which is there also has  
2 to be an audit, right? A reliable audit?

3 A It depends on the -- on the technology and  
4 how it all fits together.

5 But we recommended for the NASEM report  
6 that if you're going to have a scanner, then you  
7 need to have an audit because the scanner could be  
8 compromised.

9 Q All right. I'm sorry. Take a look at  
10 page 55 of 97 now, heading 10.1.

11 A Got it.

12 Q Here you have the heading "[REDACTED]  
13 [REDACTED]."

14 Do you see that?

15 A I do.

16 Q And Dr. Halderman writes, "[REDACTED]  
17 [REDACTED]  
18 [REDACTED]  
19 [REDACTED]."

20 Do you see that?

21 A Yes.

22 Q You don't dispute that finding in your  
23 declaration, correct?

24 A I do not.

25 Q He then goes on in the same section, "[REDACTED]

1 [REDACTED]

2 [REDACTED] ."

3 Do you see that?

4 A I do.

5 Q You don't dispute that finding in your  
6 declaration, correct?

7 A I do not.

8 Q Come to the page 57 of 97, please.

9 A I'm there.

10 Q Do you see the heading 11.1, "[REDACTED]"

11 [REDACTED] "?"

12 A Yes.

13 Q Here Dr. Halderman writes, [REDACTED]

14 [REDACTED]

15 [REDACTED]

16 [REDACTED] ."

17 Do you see that?

18 A I do.

19 Q You did not dispute that finding in your  
20 declaration, correct?

21 A I did not.

22 Q Do you see the next heading, 11.2, on the  
23 same page?

24 A I do.

25 Q Here it reads, "[REDACTED]"

1

[REDACTED]

2

[REDACTED]."

3

Do you see that?

4

A I see it.

5

Q Dr. Halderman writes, "[REDACTED]

6

[REDACTED]

7

[REDACTED]

8

Do you see that?

9

A I do.

10

Q You do not dispute that finding in your

11

declaration, correct?

12

A I do not.

13

Q Dr. Halderman goes on here to write, "[REDACTED]

14

[REDACTED]

15

[REDACTED]."

16

Do you see that?

17

A I do.

18

Q You do not dispute that finding in your

19

declaration, correct?

20

A I do not.

21

Q Come to the next page, please, Section

22

11.3.

23

A Okay.

24

Q The report itself is not 97 pages long, so

25

we're getting towards the end. I imagine this is

1 getting monotonous.

2 Take a look at Section 11.3. Do you see  
3 where it reads, "[REDACTED]  
4 [REDACTED]"?

5 A Yes.

6 Q Here Dr. Halderman writes, "[REDACTED]  
7 [REDACTED],  
8 [REDACTED]."

9 Do you see that?

10 A I do.

11 Q You do not dispute that finding in your  
12 declaration, correct?

13 A I do not.

14 Q He then goes on in the same section to  
15 write, "[REDACTED]  
16 [REDACTED]  
17 [REDACTED]"

18 Do you see that?

19 A I do.

20 Q You did not dispute that finding in your  
21 declaration, correct?

22 A Did not.

23 Q Come to page 62 of 97, please. There's a  
24 heading, "[REDACTED]"

25 A Got it.

1           Q    Did you study any of the references that  
2   Dr. Halderman cites in preparing your response to  
3   this report?

4           A    Did I study any of the references? I read  
5   some of these, not all of them.

6           Q    Do you recall which ones you read for your  
7   report?

8           A    Okay. Do you want me to go through each  
9   one and tell you which ones?

10          Q    That would be great.

11          A    Okay. Let's walk through. So they are  
12   numbered, so I will refer to numbers. Is that okay?

13          Q    That's perfect.

14          A    Let's see. Number 7, I've read that.  
15   That was a while ago. Number 9. I believe  
16   Number 10, I've read that. Number -- I remember  
17   Number 11, but I can't recall if I read it.  
18   Number 12. Let's see. I think Number 14. I think  
19   Number 26, but I'm vague on that one, too. I  
20   believe Number 31, but that was a while ago.  
21   Obviously declarations. 43, I think I've read that  
22   one. That looks familiar, that Washington Post  
23   story. 48, 54, 57, obviously 58, 59, maybe 64. I  
24   believe I read 80. That looks familiar. 86, the  
25   VVSG, 87.

1                   Okay. I think that's it.

2                   MR. CROSS: Let's go off the record in  
3 case Ms. Marks wants to come back in, because I'm  
4 done with this exhibit.

5                   THE VIDEO OPERATOR: Okay. Going off the  
6 record at 4:14.

7                   (Recess, 4:14 p.m. - 4:25 p.m.)

8                   THE VIDEO OPERATOR: Back on the record at  
9 4:25.

10 BY MR. CROSS:

11                 Q Dr. Gilbert, you talk about the risk of  
12 insiders manipulating hand-marked paper ballots,  
13 right?

14                 A Yes.

15                 Q And by "insider," you mean someone who has  
16 legitimate access to the ballots like a poll worker  
17 or election worker of some kind; is that what you  
18 mean?

19                 A That's one area. It's someone on the  
20 inside where the ballots are, more generally  
21 speaking.

22                 Q You have not undertaken any investigation  
23 of whether there are any such insiders in Georgia  
24 already who are capable of exploiting any of the  
25 hacks that Dr. Halderman identifies in his report

1 with the current system, right?

2 MR. MILLER: Object to form.

3 THE WITNESS: I don't understand. Have I  
4 done an investigation to determine if there's  
5 someone in Georgia who can do his hack? Is that the  
6 question?

7 BY MR. CROSS:

8 Q Right, who is an insider in the way that  
9 you use that term.

10 A I have not had the opportunity to subpoena  
11 or question every poll worker or election official  
12 in the State of Georgia to determine if they had the  
13 technology, capability to do what Dr. Halderman has  
14 done.

15 Q You're not aware of any investigation in  
16 the State of Georgia into that by the Secretary of  
17 State or anyone else, right?

18 MR. MILLER: Objection. Relevance.

19 THE WITNESS: I thought -- I'm sorry.  
20 Maybe it's a terminology thing.

21 My understanding, in order for there to be  
22 an investigation, there has to be an allegation or  
23 crime. I was not aware that there was an allegation  
24 or a crime that BMDs were hacked by an insider, so  
25 to my knowledge, no, and I was not aware that that



1 was a case that existed. I was not aware of that.

2 BY MR. CROSS:

3 Q Aren't you saying that BMDs -- you prefer  
4 them over hand-marked paper ballots because an  
5 insider can hack paper ballots?

6 A No. That's part of it, but it's more than  
7 that.

8 Q But that's part of it, right?

9 A Yes.

10 Q So don't you think that those who are  
11 responsible for administering elections should take  
12 reasonable precautions to make sure that there are  
13 not insiders within their ranks who can exploit  
14 hacks of the election system like those that  
15 Dr. Halderman has identified?

16 A My expertise is in election security. I'm  
17 not in law enforcement to determine how to make that  
18 investigation or how that would happen. I'm not  
19 familiar with the protocol to do that. I think  
20 that's outside of my bounds of expertise to say how  
21 the state would go about that.

22 Q I know we've been over this before, but  
23 just to lay the groundwork for a question that I  
24 want to ask, we're agreed that voters cannot verify  
25 what's actually tabulated in Georgia elections with

1 the QR code, right?

2 A Georgians cannot -- to my knowledge, no  
3 human being can look at a QR code and determine  
4 what's in it, to my knowledge. I have not seen  
5 that.

6 Q So a voter with a ballot in Georgia has no  
7 greater ability to verify what's going to get  
8 tabulated and stored in the election data as the  
9 cast ballot in Georgia, they have no greater ability  
10 to do that than they did with the old DREs, right?

11 A That I don't know because what's stored in  
12 the -- in the tally machine, I'm not aware of any  
13 scenario where a voter can verify that, even with  
14 hand-marked paper ballots. They cannot go to that  
15 machine and verify that it stored their vote as they  
16 marked on the ballot. That does not exist in any  
17 election system, to my knowledge.

18 Q But a voter with a hand-marked paper  
19 ballot that's going to be scanned at the poll, that  
20 they're feeding into the scan, they have the ability  
21 to verify that the selections on that ballot are as  
22 exactly what they marked before it's scanned, right?

23 MR. MILLER: Objection.

24 THE WITNESS: They have the ability to  
25 verify that the marks on that ballot are the marks

1       that they made.

2               That doesn't mean that the marks on the  
3       ballot are accurate. That doesn't mean that the  
4       marks on the ballot will be translated the way they  
5       marked it. Their intent is not guaranteed to be  
6       captured by the scanner.

7       BY MR. CROSS:

8               Q     But if the scanner is operating as it  
9       should and they have carefully verified each of the  
10      selections on their hand-marked paper ballot, then  
11      they can have reasonable confidence that it's going  
12      to be tabulated, at the moment it goes into the  
13      scanner, correctly, right?

14              MR. MILLER: Object to form.

15              THE WITNESS: It goes back to  
16      "reasonable." I don't know to what extent. But  
17      hopefully they have complete confidence. Because if  
18      they don't, we have an issue with our elections.  
19      But there is a level of reasonableness there that's  
20      variable.

21       BY MR. CROSS:

22              Q     But with a QR code, the voter has no  
23      ability -- no matter how carefully they review the  
24      ballot, they have no ability to verify that what's  
25      going to get tabulated as their vote when it goes

1       into the scanner is accurate even if the scanner is  
2       working exactly as it should, right?

3               MR. MILLER: Objection. Asked and  
4       answered.

5               THE WITNESS: There's no way for a human  
6       being to look at a QR code, to my knowledge, and  
7       determine what's in it. So by that definition, you  
8       cannot -- you don't know what's in it. You can't  
9       read the QR code with your eyes.

10       BY MR. CROSS:

11              Q     And that's the same way with the old DREs  
12       in Georgia, right? The moment the voter casts their  
13       ballot, casts their ballot on the DRE, they have no  
14       way to know whether it's going to be counted as they  
15       intended because they don't know whether the DRE is  
16       working properly, right?

17              MR. MILLER: Objection. Asked and  
18       answered.

19              THE WITNESS: The DRE -- there's no way to  
20       know if it's even stored, if it's stored as  
21       intended, if it's modified. You have no idea of  
22       anything.

23              With the QR code, you knew it was  
24       successfully scanned. You do have that  
25       determination. Just like you do with a hand-marked

1 paper ballot, you know that it was scanned, but you  
2 don't know that it read it correctly or even stored  
3 it. You don't know that it didn't change your vote.  
4 You have no idea what it did in the tally.

5 BY MR. CROSS:

6 Q As an election security expert, do you  
7 believe that an election system can be so unsecured  
8 that it should not be used?

9 MR. MILLER: Objection.

10 THE WITNESS: Yes.

11 BY MR. CROSS:

12 Q You've prepared something you called a  
13 ballot-marking verification protocol, right?

14 A Yes.

15 Q And the conclusion you included in that,  
16 you wrote, "Don't trust the BMD. Audit it with the  
17 BMVP."

18 Do you recall writing that?

19 A Yes.

20 Q And why did you write that?

21 A Because whenever you use a computing  
22 device to do the tally, you cannot trust it. You  
23 have to do the audit, which was the conclusion of  
24 the National Academies report. That's why we do the  
25 audit.

1           If you have hand-marked paper ballots, you  
2       have to do the audit because the scanner could lie  
3       to you. You can hack the scanner.

4           Q    You testified in a case captioned National  
5       Federation of the Blind versus Linda Lamone; is that  
6       right?

7           A    Yes.

8           Q    And that was in 2014; is that right?

9           A    I don't know the year.

10          Q    Do I understand correctly that you  
11       testified on behalf of the plaintiffs that were  
12       challenging the election system in that case?

13          A    No, I don't recall which side I was on. I  
14       have to go back and look at my notes. It's been a  
15       long time, and I've served on several cases since  
16       then.

17          Q    You don't recall that you testified on  
18       behalf of the National Federation of the Blind?

19          A    I do recall that. So were they the  
20       plaintiffs?

21          Q    Yes.

22          A    Whoever they were, that's who I -- what  
23       side I was on. Does that help?

24          Q    Yes. Yes. Okay. What was the thrust of  
25       your opinions in that case on behalf of the National

1 Federation of the Blind?

2 A That was a remote-accessible  
3 ballot-marking case, giving people the ability to  
4 pull up a ballot online, use their home equipment to  
5 mark it and print it and send it back.

6 Q Why did you testify on behalf of the  
7 National Federation of the Blind in that case?

8 A Because they asked me to, and I have  
9 expertise in the area.

10 Q Did you support the relief that they were  
11 seeking in that case?

12 A Yes.

13 Q What was that relief?

14 A To allow an option for remote-accessible  
15 believe ballot marking.

16 Q Why?

17 A To give accessibility for absentee voting  
18 for people with disabilities. In this case,  
19 specifically visual impairment.

20 Q And that relief would have -- would have  
21 helped whom, exactly?

22 A People with disabilities who wanted to  
23 participate in absentee voting.

24 Q Do you know about how many voters there  
25 are in the State of Maryland that fall into that

1 category?

2 A I do not.

3 Q Do you have a rough estimate?

4 A I do not.

5 Q Would you say it's many or few?

6 A I do not know. I have no idea. I live in  
7 the State of Florida, and I don't even know those  
8 numbers for Florida. That is something I do not  
9 memorize.

10 If I needed that data, I'd go to my  
11 colleagues at Rutgers University who's in my  
12 declaration, and I would say, "Can you tell me these  
13 numbers?"

14 And they have that data in a database, and  
15 they usually can get it to me. So it's not  
16 something I have in my memory.

17 MR. MILLER: David, did we lose you?

18 THE VIDEO OPERATOR: We lost him. I'm  
19 going to go off the record just in case.

20 MR. MILLER: There he is.

21 THE VIDEO OPERATOR: We're still on the  
22 record.

23 MR. CROSS: Sorry about that. I don't  
24 know what just happened.

25 Q Sorry, Dr. Gilbert. Can you --



1           A    I hear you.

2           Q    Okay.

3                   Do I understand correctly that in that  
4 case, the court ordered the relief that the National  
5 Federation of the Blind was seeking in the form of  
6 an injunction?

7           A    I believe so, yes. I think that's the  
8 outcome.

9           Q    And in your view, that relief remedied the  
10 harm that all the disabled voters who were affected  
11 by the particular election system at issue, it  
12 remedied that harm for them?

13                   MR. MILLER: Objection. Calls for a legal  
14 conclusion.

15                   THE WITNESS: I don't know what that  
16 means. I don't understand that terminology.

17 BY MR. CROSS:

18           Q    That's a fair point.

19                   You were testifying on behalf of the  
20 National Federation of the Blind to help certain  
21 disabled voters protect their right to vote; is that  
22 fair?

23           A    Yes.

24           Q    And the relief that was awarded in that  
25 case that you were seeking on behalf of them and

1 supporting, do I understand correctly that in your  
2 view, that helped protect their right to vote?

3 A Yes. It gave them access that others had  
4 who do not have a disability.

5 Q You have a Twitter account, right?

6 A Yes, I do.

7 Q Do you recall re-tweeting a tweet from  
8 Matthew Masterson on September 28 of this year  
9 concerning CISA's access to Dr. Halderman's sealed  
10 report?

11 A I probably did. Matt Masterson and I are  
12 colleagues, and I promote things that he puts out so  
13 other people just know what's going on. So he's a  
14 colleague of mine.

15 Q And Mr. Masterson was in a former senior  
16 position at CISA, right?

17 A I think it was CISA. I don't know. He  
18 was at the EAC, then he left, and he was -- I forget  
19 where he went directly. Department of Defense or  
20 something. So he's had a couple positions, so I  
21 kind of got lost in the mix of that.

22 Q Why did you think it was important for  
23 people to read Mr. Masterson's tweet when you  
24 re-tweeted it about CISA getting access to  
25 Dr. Halderman's sealed report?

1 MR. MILLER: Objection. Relevance.

2 THE WITNESS: I didn't take the time to  
3 contemplate that it would be important. Matt put it  
4 out and it popped up at the top of my Twitter feed.  
5 So coming from him, I said, "Oh, let me get this  
6 out."

7 So I'm respectful of what he puts out, and  
8 I'm respectful of what Alex does, Dr. Halderman.

9 BY MR. CROSS:

10 Q Do you oppose CISA getting access to  
11 Dr. Halderman's report?

12 MR. MILLER: Objection. Relevance.

13 THE WITNESS: To be honest, I hadn't  
14 thought about it. It's not something I contemplated  
15 at all.

16 BY MR. CROSS:

17 Q As you sit here today, do you have any  
18 reason to object to that?

19 MR. MILLER: Same objection.

20 THE WITNESS: So just to be clear, the  
21 report that I have as part of this case, do I object  
22 to CISA having access to that?

23 BY MR. CROSS:

24 Q Yes.

25 A I don't know. It's hard to say whether I

1 have an opinion on it or not.

2 Again, I don't know the ground rules for  
3 sharing that kind of information, whether or not --  
4 I don't know. I have to think about it and  
5 understand more about CISA's role as it relates to  
6 this particular case. So the answer is I don't  
7 know.

8 (Exhibit 7 was marked for identification  
9 and is attached hereto.)

10 BY MR. CROSS:

11 Q Grab Exhibit 7, if you would, please.  
12 We're almost done, Dr. Gilbert.

13 A Exhibit 7?

14 Q Yeah.

15 A I found it. Got it.

16 Q You see this is the tweet that we were  
17 talking about where you re-tweeted a tweet from  
18 Matthew Masterson regarding CISA's access to  
19 Dr. Halderman's report?

20 A Okay.

21 Q And Mr. Masterson wrote and what you  
22 re-tweeted, "Just to be clear here, CISA is offering  
23 to facilitate coordinated disclosure from a  
24 researcher to impacted entities. This is something  
25 they have a division whose job it is to do this and

1 we did with elections fairly regularly."

2 Do you see that?

3 A I see it.

4 Q When you re-tweeted this, you didn't  
5 object or express any concern about CISA getting  
6 this access, right?

7 MR. MILLER: Objection. Relevance.

8 THE WITNESS: I didn't say anything. I  
9 just re-tweeted it.

10 I think -- just to be clear, if I re-tweet  
11 something, that is not an endorsement of it. It's  
12 sharing information. That's how I was doing this.  
13 I was sharing information.

14 I'm in the election community. So is  
15 Matt. And Matt and I have a relationship for many  
16 years. And so I feel that just sharing information  
17 and putting it out there so others can make their  
18 own determination, that's how I see this. It's not  
19 an endorsement on my behalf or otherwise.

20 BY MR. CROSS:

21 Q Dr. Gilbert, you don't indicate in your  
22 declaration whether there has been any hack or  
23 compromise of Georgia's election system, right?

24 A Correct.

25 Q And that's not something you undertook to

1 investigate, right?

2 A Something I -- I don't understand. I  
3 don't -- I wouldn't think I had the authority to  
4 start an investigation to say Georgia's election  
5 system had been hacked for the 2020 election.

6 If there was such a hack, I think it would  
7 have made national media, or an accusation of such a  
8 hack would have made national media. But I don't  
9 see myself as the authority to go in and declare a  
10 hack was done. No.

11 Q Do you understand that the state has  
12 represented in this case that they are not aware of  
13 any hacking of any elections in Georgia?

14 A I'm not surprised by that. Again, if  
15 there was any accusation, that would have made  
16 national media.

17 Q But in your role as an election security  
18 expert retained by the state addressing the security  
19 of and reliability of the election system, you  
20 didn't conduct any investigation of your own into  
21 whether there has been any hacking that's occurred  
22 in the state with any election. You just didn't  
23 look into it, right?

24 MR. MILLER: Asked and answered.

25 THE WITNESS: I'm struggling with this.

1 It seems by that question it gives me the impression  
2 that I have the authority to look into -- and I  
3 don't know of any allegation of election hacking in  
4 the State of Florida -- I mean, Georgia. And what  
5 you're saying is I had that capability to do that.

6 I'm not aware that I had that, so that  
7 would be news to me that I can do that.

8 BY MR. CROSS:

9 Q It never occurred to you to just ask your  
10 client, "Hey, are you aware of any instance where  
11 there's been unauthorized access to any component of  
12 the election system in Georgia?"

13 A Absolutely not, because of the last  
14 election being highly contentious, if there was even  
15 an allegation, it would have made national media.

16 Q Dr. Gilbert, you've been retained in this  
17 case since November of 2019, right?

18 A I guess. I don't remember the exact start  
19 date.

20 Q Well, you testified in a hearing last  
21 September that predates the controversy in Georgia  
22 regarding the November election, right?

23 A Yes.

24 Q So at no point prior to the controversy  
25 you just mentioned about elections in Georgia, it

1 never occurred to you to ask your client, "Hey, are  
2 you aware of whether there's ever been unauthorized  
3 access to election equipment or software or data in  
4 Georgia?"

5 MR. MILLER: Objection. Asked and  
6 answered.

7 THE WITNESS: No. I'm sorry. But you  
8 just asked a totally different question.

9 BY MR. CROSS:

10 Q I didn't mean to.

11 A Which question are we dealing with?  
12 You've asked two different questions, and I want to  
13 know -- so ask me the exact question you want an  
14 answer to, because you just asked two different  
15 questions that are not the same. So please be clear  
16 in what you're asking.

17 Q So from the time that you were engaged in  
18 this case in November of 2019 until at least the  
19 September hearing of last year, it never occurred to  
20 you to ask your client whether they were aware of  
21 any unauthorized access to any components of the  
22 Georgia election system with the current system; you  
23 never asked that, right?

24 MR. MILLER: Objection. Asked and  
25 answered.



1 THE WITNESS: I did not ask that question.

2 BY MR. CROSS:

3 Q And you did not ask that question  
4 regarding the prior DRE system, correct?

5 A I did not ask that question. The answer  
6 to that was no.

7 Q In what way?

8 A There was an article, Kennesaw State and  
9 the files. Are you familiar with what I'm talking  
10 about?

11 Q Tell me what you mean.

12 A The previous DRE system was managed by  
13 Kennesaw State, statewide, and there was a report --  
14 I don't remember the exact details, but there was a  
15 report of a breach or something with files and the  
16 DRE. So I remember that report.

17 Therefore, it was not a question for me to  
18 ask, knowing that it was in the public already.

19 Q You didn't undertake any investigation to  
20 determine whether that breach of the old DRE system  
21 has, in any way, infected the new BMD system in  
22 Georgia, correct?

23 A I did not. As I mentioned in my previous  
24 declaration that the BMD is air-gapped, and this is  
25 an independent entity, independent system. It's not

1 even the same manufacturer.

2 Q Right. But you're assuming that it's  
3 air-gapped because you've never confirmed that it  
4 is, right? I thought we established that.

5 MR. MILLER: Asked and answered.

6 BY MR. CROSS:

7 Q You're assuming it's air-gapped, right?

8 A No, I was using the documents that were  
9 provided to me that the machine was air-gapped.

10 Q I thought we established earlier you don't  
11 actually know whether any aspect of the system is  
12 actually air-gapped because you haven't looked,  
13 right?

14 MR. MILLER: Same objection.

15 THE WITNESS: If the standard is that  
16 you -- any written documentation could be false, and  
17 the only way to determine if the technology is what  
18 it's documented as, then I have not evaluated it to  
19 make that determination.

20 So I think what you're saying, it's  
21 possible that the documents that were provided to me  
22 were incorrect.

23 BY MR. CROSS:

24 Q Are you aware that there was a hearing in  
25 this case in 2018 involving the prior election

1 system?

2 A I -- I don't know. You have to give me  
3 details, and then I could tell you if I heard about  
4 it. I've been involved in many cases and I read a  
5 lot of this information. So to just ask me that  
6 question, it's a tough one for me to say yes.

7 Again, I live in Florida, not Georgia. If  
8 I was in Georgia, I'd probably be able to answer  
9 that question easily.

10 Q Are you aware that in 2018, the state  
11 represented, including under oath, that the DRE  
12 system was air-gapped, and it came to light during  
13 the course of a hearing, where their witnesses were  
14 cross-examined, that, in fact, it was not  
15 air-gapped, that there were connections to the  
16 Internet or to devices that are connected to the  
17 Internet?

18 Is that something you reviewed and  
19 considered for your opinions in this case?

20 MR. MILLER: Objection.

21 THE WITNESS: I was not aware of that.

22 BY MR. CROSS:

23 Q Don't you think that that is relevant  
24 information in determining whether you can rely on  
25 documentation or representations from the state on

1       whether the new system is, in fact, air-gapped?

2               MR. MILLER: Objection. Relevance.

3               THE WITNESS: That's information. I don't  
4 know -- so the information -- so there's a scenario  
5 where that information -- I don't know the source of  
6 the information that provided the false information  
7 about the DRE. It may not be the same source that  
8 provided the information about the BMD.

9               In other words, in essence, based on the  
10 questioning here, if someone ever was dishonest,  
11 then that assumes all people are dishonest, and I  
12 don't believe that.

13 BY MR. CROSS:

14              Q     To be clear, Dr. Gilbert, I'm not  
15 suggesting -- I'm not opining on anybody's intent.  
16 People can believe that something is air-gapped and  
17 be wrong about that for any manner of reasons.

18              All I'm asking you is, for the opinions  
19 you've offered in this case, you didn't think it was  
20 relevant to go back and examine the reliability of  
21 documentation and representations that had been made  
22 about the air-gapping of the system in light of  
23 those representations coming to light as unreliable  
24 in the past?

25              A     As I said, I was not aware of the

1       representations that you just presented as  
2       unreliable in the past. I'll say it again. I was  
3       not aware of them.

4               This is news, the first time I'm hearing  
5       it, number one. The documents that were provided to  
6       me, again, are cited in my declaration, and they,  
7       from my interpretation, are official documents.

8               But if they are unofficial or if they're  
9       false, that would be good information for me to be  
10      aware of.

11             Q    Are you aware that the Secretary of  
12      State's office engaged a company called  
13      Forless (phonetic) to do some cybersecurity  
14      assessments on behalf of the state?

15             A    That does not ring a bell. I don't -- I'm  
16      not familiar with that company.

17             Q    So in formulating your opinions in this  
18      case, you haven't reviewed or considered any reports  
19      by Forless that were prepared on behalf of the  
20      Secretary of State's office; is that right?

21             A    I don't think so. That doesn't ring a  
22      bell. The name -- that name doesn't resonate with  
23      me right now.

24             MR. CROSS: All right. Let's go off the  
25      record.

1 THE VIDEO OPERATOR: Going off the record  
2 at 4:56.

3 (Recess, 4:56 p.m. - 5:10 p.m.)

4 THE VIDEO OPERATOR: We are back on the  
5 record at 5:10.

6 (Exhibit 8 was marked for identification  
7 and is attached hereto.)

8 BY MR. CROSS:

9 Q Dr. Gilbert, can you grab Exhibit 8,  
10 please?

11 A All right. I got it.

12 Q Do you recognize Exhibit 8 as a copy of  
13 your engagement letter on behalf of the state in  
14 this case?

15 A I guess so. This looks familiar. Okay.  
16 Yeah.

17 Q If you come to page 3, do you see your  
18 signature and the date November 12, 2019?

19 A Yes.

20 Q Do you recall that the first declaration  
21 you issued in this case on behalf of the state was  
22 dated November 13, 2019, the very next day?

23 A I don't recall the date.

24 Q Do you recall how much time you put into  
25 preparing your declaration?

1           A    I'd have to go look at records or  
2 something, but I don't recall.

3           Q    Approximately how many hours have you  
4 worked on behalf of the state in this case?

5           A    I don't know if I have a record of that.  
6 Let me see.

7           Q    Just your best estimate. I don't need you  
8 to look it up, Dr. Gilbert.

9           A    That's hard for me. I'm only tracking  
10 since the last one. So I would say -- I don't  
11 know -- 40 hours or -- I don't even know. I'd have  
12 to -- I'd really have to go and analyze and look at  
13 invoices and all of that.

14          Q    How much have you been paid for your work  
15 in this case?

16          A    That I don't know, either. Probably on  
17 the order of, my best guess, probably like 5- -- 4-  
18 or 5,000, if that maybe.

19          Q    Do you anticipate offering any opinions  
20 at any future date in this case that are not  
21 reflected in your declaration or in your testimony  
22 today?

23          A    I don't know.

24          Q    So as you sit here in this moment, are  
25 there any opinions that you have in mind that you

1 would anticipate offering that you've not  
2 already shared with us through written or oral  
3 testimony?

4 A I don't anticipate anything at this time.

5 Q How many times have you been engaged as a  
6 consultant or expert to address election security  
7 issues?

8 A Several. Off the top of my head, probably  
9 six.

10 Q Can you describe each of those?

11 A This case, the Maryland case, then there  
12 was another Maryland case. I've been on New York,  
13 New Hampshire, Pennsylvania. And I think I've  
14 discussed -- I didn't get -- go all in with  
15 something in California maybe, but those are the six  
16 off the top of my head.

17 Q You said the Maryland case. Were you  
18 talking about the one for the National Federation of  
19 the Blind that we looked at earlier as one of the  
20 Maryland cases?

21 A Yes, that's one of them.

22 Q And what did the other one involve?

23 A The other Maryland case, I think that's  
24 another ballot-marking case, BMD case.

25 Q When were you involved in that case?



1           A    Maybe last year.

2           Q    Did you submit any testimony, written or  
3   oral?

4           A    I believe so.  I'd have to go back and  
5   look at all those records.

6           Q    What was the thrust of your opinions in  
7   that case?

8           A    If it's the right case, that the  
9   ballot-marking device was acceptable for use  
10   throughout the state.  I believe that was the  
11   Maryland -- the second Maryland case.  But again,  
12   I'd have to go look all these cases up.  They're  
13   blurry to me because there were so many.

14               Some were remote ballot-marking cases, so  
15   there's a variation in what the cases were about,  
16   and I just -- I'd have to go look and see case to  
17   case what it was, and what -- oh, and Virginia.  
18   There was one in Virginia as well.

19               So I'd have to go look and verify these  
20   things.

21           Q    Dr. Gilbert, to make it easy on you,  
22   rather than to walk through each of these and test  
23   your memory, we would ask that you would send us a  
24   disclosure statement that identifies each  
25   engagement in which you have been retained

1 on related to election security issues so that we  
2 can see what those engagements were and what the  
3 thrust of your role or opinions were and the  
4 timing.

5 I just want to ask, are you willing to do  
6 that? If you're not, we're going to have to go case  
7 by case right now. I'm trying to save you some  
8 time. I need to know whether you're willing to do  
9 that or whether Mr. Miller is going to object.

10 MR. MILLER: David, we'll provide it to  
11 you. Yeah.

12 MR. CROSS: Okay.

13 MR. MILLER: If that's the request.

14 MR. CROSS: Yeah. Thank you. It will  
15 make it a lot faster for you, Dr. Gilbert. We  
16 appreciate that.

17 (Exhibit 9 was marked for identification  
18 and is attached hereto.)

19 BY MR. CROSS:

20 Q All right. Take a look at -- and I  
21 promise, we're almost done.

22 Take a look at Exhibit 9, please, just  
23 briefly on this. Let me know when you have it.

24 A Okay. Got it.

25 Q Do you see here, this is a portion of a

1 transcript in a case, Assemblyman Reed Gusciora, and  
2 it's in -- as one of the plaintiffs, and it's in  
3 Superior Court of New Jersey.

4 Do you see that?

5 A Okay. At the top? Yes.

6 Q And you see, if you look in the middle  
7 where it says, "Place: Mercer County Courthouse,"  
8 the date, March 24, 2009.

9 Do you see that?

10 A Yes.

11 Q And if you look at the bottom right  
12 corner, do you see where it says,  
13 "STATE-DEFENDANTS," and then there's a number?

14 A Bottom right corner? Yes, I do. I do.

15 Q And I will tell you, what that indicates  
16 is this is a document that was produced to us by the  
17 state defendants in this case. That's how we got  
18 this.

19 I wanted to ask you, if you look at -- go  
20 to the bottom of the first page of the testimony,  
21 page 81, line 23.

22 Do you see that?

23 A Page 81, line 23. Yes.

24 Q And actually -- I'm sorry. To give you a  
25 little more context, look at the top of page 81,

1 line 6.

2 Do you see that?

3 A Yes.

4 Q And you see it says, "But, Dr. Shamos,  
5 haven't you stated."

6 Do you see that line?

7 A Yes.

8 Q Do you understand that this is an  
9 examination of Dr. Shamos in this case?

10 A Okay.

11 Q Now, if you come down to line 23 on that  
12 same page, the question to Dr. Shamos, "So do you  
13 believe that DREs are better without a paper trail  
14 than with one?"

15 Do you see that?

16 A I see that.

17 Q His answer was, according to this  
18 transcript, "I believe that DREs are better without  
19 the currently available paper trail mechanisms. I  
20 don't rule out the possibility that somebody could  
21 design a better paper trail mechanism, that would be  
22 perfectly fine."

23 Do you see that?

24 A I see that.

25 Q I just have one question for you because

1       it directly relates to you.

2               If you come to page 83, line 17 -- and let  
3       me know when you have that.

4               A     Page 83, line 17. I'm there.

5               Q     And the question was, "So you're saying  
6       that other people agree with your position?

7               "Answer: Yes.

8               "Question: Who else?

9               "Answer: Ted Selker, for example, of MIT.  
10       Juan Gilbert of Auburn University."

11              Do you see that?

12              A     I see it.

13              Q     And then if you come to the top of 84 --  
14       are you there?

15              A     I'm there.

16              Q     -- at line 4, the questioner continues,  
17       "If we were to call Professor Selker, and you said,  
18       Juan Gilbert as rebuttal witnesses, it's your  
19       position that they would get on the stand and state  
20       that they believe that paperless DREs are better as  
21       they exist than DREs with paper -- with paper as  
22       they exist now? Is that your testimony?

23              "Answer: Well, that's my belief. I don't  
24       know what they would actually say under oath.  
25       Nobody knows what they would say under oath."

1 Do you see that?

2 A I see it.

3 Q Does Dr. Shamos characterize your position  
4 accurately on this issue here?

5 MR. MILLER: Objection. Relevance.

6 THE WITNESS: No. What year was this?

7 BY MR. CROSS:

8 Q It looks like 2009, according to the  
9 transcript.

10 A No. That's not -- that is not my  
11 position. And you can find probably videos of me --  
12 in fact, the presentation I did at Princeton, I  
13 was clear in saying what my position was, that you  
14 had to have a paper ballot. There's no way to  
15 secure a digital ballot. There's no known way to do  
16 that.

17 I'm on the record saying that several  
18 times in the EAC, all over the place.

19 Q You were at one point a proponent of DREs,  
20 right?

21 MR. MILLER: Objection. Relevance.

22 THE WITNESS: I was a proponent of  
23 accessible DREs with a paper trail. We have to go  
24 back and look at the record.

25 We may have been the first to actually do

1       this when we did -- back in 2000, I know we were the  
2       first to create the universally designed voting  
3       machine because we did that in 2002, 2003, when no  
4       one believed you could have one machine that  
5       everyone could vote on. So we'd been doing that.

6               But I said that accessibility at the time  
7       was -- DREs gave accessibility, but, yeah, the  
8       security aspect, you just don't know because you  
9       can't verify.

10      BY MR. CROSS:

11             Q     But you no longer support DREs as a  
12       reliable election mechanism in the U.S., right?

13             A     Correct.

14             MR. MILLER:   Objection.   Relevance and  
15       misstatement.

16      BY MR. CROSS:

17             Q     And, I'm sorry, did you say "correct"?

18             A     Yes. DREs, again, there's no way to  
19       secure a digital ballot.

20             Q     Given you were once a proponent of DREs  
21       and you now agree that DREs are not reliably secure,  
22       do you allow for the possibility that you are wrong  
23       about the reliability of BMDs in your stance in  
24       supporting them today?

25             MR. MILLER:   Object to form and relevance.

1           THE WITNESS: I do not. I think it's  
2     interesting that -- that is a good question to ask  
3     in light of the new development, in particular,  
4     transparent voting machine that broke  
5     Dr. Halderman's, I guess, hack or whatever you  
6     want to call it, that voter verification. Now we  
7     solved that problem. Solved. Solution. There it  
8     is.

9           I do know that voting through the BMD, as  
10    I stated in my declaration, has advantages over  
11    hand-marked paper ballots, and I still believe  
12    they -- there's a much better option than  
13    hand-marked paper ballots. I believe that is a  
14    better option for providing equity, security,  
15    usability, accessibility. The BMD or a form of a  
16    BMD is the way to go.

17   BY MR. CROSS:

18           Q    I'm sorry. Did you say the new  
19    transparent voting machine BMD prototype you have  
20    broke Dr. Halderman's hack?

21           A    Yes.

22           Q    And you say that's because this new  
23    prototype that you have allows a greater ability of  
24    voter verification; is that right?

25           A    Yes. Not only allows. I guarantee voter



1 verification. You'd have to try not to verify,  
2 especially -- again, that was the first version that  
3 I posted. The next version is even better.

4 So at a time when Dr. Halderman and others  
5 said, "Well, there's no -- people can't verify,  
6 people won't verify," I created a solution that  
7 gives that, and now you can have accessibility at  
8 the same time.

9 So there you go. Again, I don't break  
10 these things. I fix them and make them work. But  
11 I'm glad he exists because he keeps me busy.

12 Q And to be clear, when you say you broke  
13 his hack, your new prototype doesn't prevent any of  
14 the hacks that Dr. Halderman has identified with the  
15 election system in Georgia, correct?

16 A We'll find out in 2022. As I mentioned  
17 earlier, I hope Dr. Halderman would be open to  
18 exploring that option to see. We'll see.

19 Q Let me make sure we're understanding each  
20 other.

21 A Yeah.

22 Q Your position is that your new prototype  
23 BMD protects against the types of hacks that  
24 Dr. Halderman has identified in his report in this  
25 case; is that fair?

1           A    I'm saying that I'm working on a new  
2   extension of that prototype that I will have go  
3   public within 2022 that either prevents  
4   Dr. Halderman from hacking it or eliminates his  
5   hacks and makes them irrelevant.

6                   And again, if -- I hope that he is open to  
7   exploring that, and we'll find out. I hope that's  
8   the case.

9           Q    That prototype is not used in the State of  
10   Georgia today, correct?

11          A    The prototype is a prototype that's not  
12   being used anywhere in the world.

13          Q    And -- so that prototype does not offer  
14   any protection to Georgia voters using the current  
15   system today with respect to the hacks that  
16   Dr. Halderman has identified, correct?

17          A    No. It is not offered -- it's a  
18   prototype. It has not gone to a certification. It  
19   has not been produced as a product. It is not a  
20   product.

21          Q    Even with respect to that prototype, do I  
22   understand correctly there's nothing in that  
23   prototype that prevents the hacks that Dr. Halderman  
24   has identified from occurring; what you're saying is  
25   that the greater level of voter verification

1 increases the odds that voters will catch the hack  
2 and then prevent the hack from having an impact on  
3 their votes or election outcomes? Do I have that  
4 fair?

5 A No. Only half.

6 It does give you verification; therefore,  
7 you cannot have a scenario where votes are swapped  
8 undetected, number one.

9 Number two, I believe it will prevent the  
10 hacks that he specializes in or make them  
11 irrelevant.

12 Q How does your prototype prevent the hacks  
13 from even occurring?

14 Again, I'm not talking about whether they  
15 have an impact because of voter verification. But  
16 what is it about your prototype that would prevent  
17 Dr. Halderman from even implementing the hack in  
18 the first instance if he had access to the  
19 equipment?

20 A I haven't released that information yet,  
21 and I don't know that it's pertinent to this case.

22 Carey, is that something I have to  
23 reveal?

24 Q It's fine.

25 MR. MILLER: David, I'll instruct him on

1 privilege if you need to me to, but otherwise --

2 MR. CROSS: That's not a privilege issue.  
3 I don't think an instruction would be proper because  
4 there's no privilege issue.

5 Q But I'm not going to ask you to disclose  
6 it, Dr. Gilbert.

7 Just so I understand, are you saying that  
8 you have in development right now with your  
9 prototype some measures that you believe would  
10 prevent someone like Dr. Halderman from even  
11 implementing on that prototype the sort of hacks  
12 that he's identified in his sealed report? Is that  
13 fair?

14 A That's fair.

15 Q Okay. But those measures are still under  
16 development; do I understand that right?

17 A Yes. I need to implement them into a  
18 hardware. And once I have that done, then I'm ready  
19 to go public.

20 And Dr. Halderman, Dr. Appel, I have a  
21 list of people who I'm going to reach out to first  
22 and make sure they're aware.

23 And I'm planning to offer, in particular,  
24 Dr. Halderman to send him a machine and let him hack  
25 it and have him send it back, and we will do an

1 experiment to see if he can hack it, and if we can  
2 determine if he hacked it and if we can correct it.  
3 We will document the whole process.

4 Q Do you believe that other makers of  
5 election equipment like Dominion should subject  
6 their voting equipment to a similar robust testing  
7 as you've just described for yours?

8 MR. MILLER: Objection. Relevance.

9 THE WITNESS: I don't know that they can.  
10 I'm not a vendor. Therefore, I'm working in a  
11 totally different space where I can do things --  
12 and I don't know what this means for people like  
13 that.

14 For example, if I send Dr. Halderman my  
15 technology and he's successful, I don't lose  
16 anything. It's not -- you know, I go back to the  
17 drawing board and start over. I don't know if the  
18 implications are the same for a vendor.

19 So it's a different thing. I have a  
20 different level of freedom to be able to do these  
21 things.

22 BY MR. CROSS:

23 Q Because you don't have a commercial  
24 interest in the product, you mean?

25 A Yes. I'm not a -- yeah. Again, I'm not a

1 vendor.

2 And remember, when I first did this, it  
3 was open source so anyone could have it. It was  
4 free.

5 MR. CROSS: I do not have any further  
6 questions for you, Dr. Gilbert, and I appreciate  
7 your time.

8 THE WITNESS: Thank you.

9 MR. MILLER: Before we go off the record,  
10 I'm just going to reserve signature for Dr. Gilbert.  
11 I'm not going to ask questions here today.

12 THE REPORTER: Before we go off, this is  
13 the reporter --

14 MR. CROSS: I think we're done. Thank you  
15 again, Dr. Gilbert.

16 MR. MILLER: I think our court reporter is  
17 speaking to us.

18 THE REPORTER: I'm sorry. Mr. Miller, a  
19 copy of the transcript?

20 MR. MILLER: Yes, please. Rough when it's  
21 available. And then a week or so on the final, if  
22 that's all right.

23 THE REPORTER: Okay. And Mr. Lowman, a  
24 copy for you?

25 MR. LOWMAN: Yes. We do not need a rough,

1       though.

2                   THE REPORTER:   Okay.   Thank you.   Did you  
3       want your copy rushed, or is the regular --

4                   MR. LOWMAN:    No.

5                   MR. CROSS:    Carla, do you want to go off  
6       the video?

7                   THE REPORTER:   Sure.   That's fine.

8                   THE VIDEO OPERATOR:   Okay.   Going off the  
9       record on October 29th, 2021, at 5:31 p.m. Eastern  
10      Time.

11                                (TIME NOTED:   5:31 p.m.)

12                                       --o0o--

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1 I, the undersigned, a Certified Shorthand  
2 Reporter of the State of California, do hereby  
3 certify:

4 That the foregoing proceedings were taken  
5 before me at the time and place herein set forth;  
6 that any witnesses in the foregoing proceedings,  
7 prior to testifying, were administered an oath; that  
8 a record of the proceedings was made by me using  
9 machine shorthand which was thereafter transcribed  
10 under my direction; that the foregoing transcript is  
11 a true record of the testimony given.

12 Further, that if the foregoing pertains to  
13 the original transcript of a deposition in a Federal  
14 Case, before completion of the proceedings, review  
15 of the transcript [x] was [ ] was not requested.

16 I further certify I am neither financially  
17 interested in the action nor a relative or employee  
18 of any attorney or any party to this action.

19 IN WITNESS WHEREOF, I have this date  
20 subscribed my name. Dated this 5th day of November, 2021.

21  
22  
23 Carla Soares

24  
25 CARLA SOARES

CSR No. 5908



1 Carey Miller, Esquire

2 carey.miller@robbinsfirm.com

3 November 5, 2021

4 RE: Curling, Donna v. Raffensperger, Brad

5 10/29/2021, Juan Gilbert, Ph.D. (#4871592)

6 The above-referenced transcript is available for  
7 review.

8 Within the applicable timeframe, the witness should  
9 read the testimony to verify its accuracy. If there are  
10 any changes, the witness should note those with the  
11 reason, on the attached Errata Sheet.

12 The witness should sign the Acknowledgment of  
13 Deponent and Errata and return to the deposing attorney.  
14 Copies should be sent to all counsel, and to Veritext at  
15 erratas-cs@veritext.com

16  
17 Return completed errata within 30 days from  
18 receipt of transcript.

19 If the witness fails to do so within the time  
20 allotted, the transcript may be used as if signed.

21  
22 Yours,

23 Veritext Legal Solutions  
24  
25

1 Curling, Donna v. Raffensperger, Brad

2 Juan Gilbert, Ph.D. (#4871592)

3 E R R A T A S H E E T

4 PAGE\_\_\_\_\_ LINE\_\_\_\_\_ CHANGE\_\_\_\_\_

5 \_\_\_\_\_

6 REASON\_\_\_\_\_

7 PAGE\_\_\_\_\_ LINE\_\_\_\_\_ CHANGE\_\_\_\_\_

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9 REASON\_\_\_\_\_

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12 REASON\_\_\_\_\_

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15 REASON\_\_\_\_\_

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18 REASON\_\_\_\_\_

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21 REASON\_\_\_\_\_

22 \_\_\_\_\_

23 \_\_\_\_\_

24 Juan Gilbert, Ph.D.

Date

25

1 Curling, Donna v. Raffensperger, Brad

2 Juan Gilbert, Ph.D. (#4871592)

3 ACKNOWLEDGEMENT OF DEPONENT

4 I, Juan Gilbert, Ph.D., do hereby declare that I  
5 have read the foregoing transcript, I have made any  
6 corrections, additions, or changes I deemed necessary as  
7 noted above to be appended hereto, and that the same is  
8 a true, correct and complete transcript of the testimony  
9 given by me.

10  
11 \_\_\_\_\_  
12 Juan Gilbert, Ph.D.

\_\_\_\_\_ Date

13 \*If notary is required

14 SUBSCRIBED AND SWORN TO BEFORE ME THIS

15 \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_.

16  
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18 \_\_\_\_\_  
19 NOTARY PUBLIC  
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